

Hong Kong Sustainable Campus Consortium

# Annual Report

2015-16





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# 1. An overview of HKSCC in 2016

Since 2010, the Hong Kong Sustainable Campus Consortium (HKSCC) has been providing a solid platform for our eight member universities to exchange sustainability initiatives and explore potential collaborative opportunities in supporting sustainable development in Hong Kong's tertiary education sector and society. We recognise the importance of universities to serve as a role model within the community and to collaborate with other stakeholders to forge workable solutions.

With this in mind, the HKSCC held four meetings in 2016, two of which were joined by Secretary for the Environment Mr. Wong Kam-sing, JP, and officials of the Environment Bureau (ENB) and Environmental Protection Department. These two sharing sessions with ENB and EPD on "Hong Kong's response to COP21 Paris Agreement on climate change" and "Food waste reduction in tertiary education sector" led to valuable and fruitful discussions.

The HKSCC also formed collaborative partnerships with the Inter-Institutional Purchasing Liaison Group (IPLG) and the Joint Universities Computer Centre (JUCC) and achieved breakthroughs in implementing sustainable purchasing and sustainable IT practices respectively.



In 2015, the Task Force on Sustainability Performance (TFSP) was established under the HKSCC to undertake more in-depth discussion and investigation of issues outside the main meetings and give recommendations to the HKSCC. TFSP held a total of five meetings in 2016.

We will continue to create new environmental sustainability initiatives through the HKSCC. With concerted efforts, I am sure that we will scale new heights in campus sustainability.

**Mr. Andy LEE Shiu-chuen**

Convenor of the Hong Kong Sustainable Campus Consortium 2016

Vice-President (Administration) and Secretary  
cum Chairman of Environmental Health and Safety Committee  
Hong Kong Baptist University

A handwritten signature in black ink, appearing to read "Andy Lee".

# Membership and meetings

Hong Kong Baptist University (HKBU) took up the 2016 convenorship and provided secretarial support to the HKSCC. Four meetings were held in March, June, November and December 2016 respectively. The membership and meeting schedule of the HKSCC in 2016 are shown in Appendices 1 and 2(a).



# The working group of HKSCC - Task Force on Sustainability Performance

TFSP was established in 2015 to follow up on major strategies and directions formulated by the HKSCC. Mr. Davis Bookhart from The Hong Kong University of Science and Technology extended his chairmanship for a year and chaired TFSP with representatives from the eight member universities in 2016 (Appendix 2(b)).

Primary aims of TFSP include:

1. Refine the HKSCC annual report to better reflect the work of HKSCC and highlight the key areas of achievement and accomplishment for HUCOM's information.
2. Develop and advise the HKSCC on the position and focus in the area of campus sustainability.
3. Collaborate with other joint groups such as Inter-Institutional Purchasing Liaison Group and Joint Universities Computer Centre; and liaise with government bodies for sustainability initiatives and advancement.

With the efforts and devotion of the TFSP members, five meetings were held from March to September 2016 with in-depth discussions on specific sustainability focuses in the beginning of the year, followed by a series of conversations with internal and external stakeholders on putting into action some of the sustainability agreements.





## 2. Sustainability figures of the UGC-funded universities

To provide a more precise and concise analysis of the sector-wide sustainability performance, the HKSCC restructured its annual report to HUCOM in 2016 by focusing on the collective performance and achievements of the eight member universities. In order to do this, members devoted a significant amount of time in the TFSP to standardising each institution's data collection to comport with international protocols on reporting. This was a significant achievement for the HKSCC; in addition to reaching consensus on the adoption of a transparent, internationally-recognised framework for reporting, the standardisation also allows for greater ability to benchmark management of resources, measure trends, and track performance over time.

With this in mind, 2016 represents the first year of data HKSCC can present with a high degree of confidence and accuracy. While data from previous years contains a number of assumptions and estimates, we have included them in this report because they remain illustrative and helpful for examining this year in context.



# Yearly highlights

In 2015-16, the Hong Kong tertiary education sector:

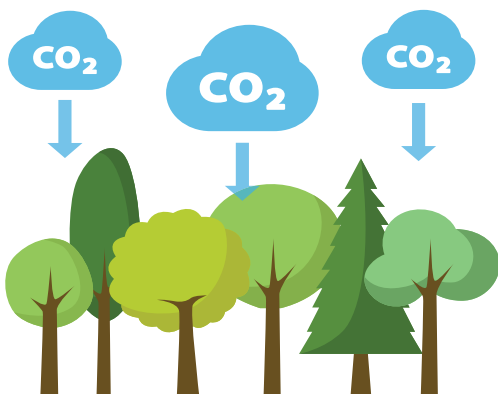


Has a combined total of **175,925** full-time equivalent university students and staff



Occupied roughly **2,833,496m<sup>2</sup>** of building space

Produced **383,148** tonnes of CO<sub>2</sub>-e of **greenhouse gas emissions**



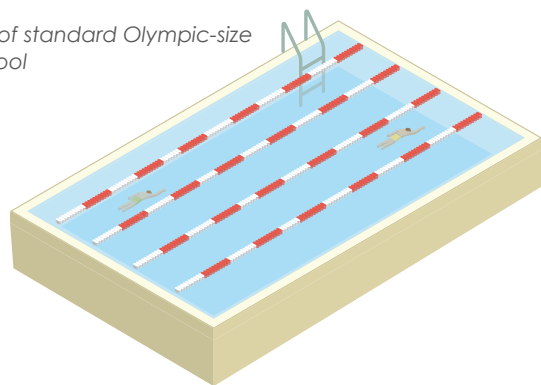
Equivalent to the amount of CO<sub>2</sub> absorbed by 16,658,609 trees in a year

*A mature tree absorbs 23kg of CO<sub>2</sub> per year (Carbon removal factor adopted by ISO-14064)*

Consumed **3,901,389m<sup>3</sup>** of **potable water**

Equivalent to the volume of 1,561 standard swimming pools

*The volume of standard Olympic-size swimming pool is 2,500m<sup>3</sup>*



Consumed **606,373,711kWh** of **energy**

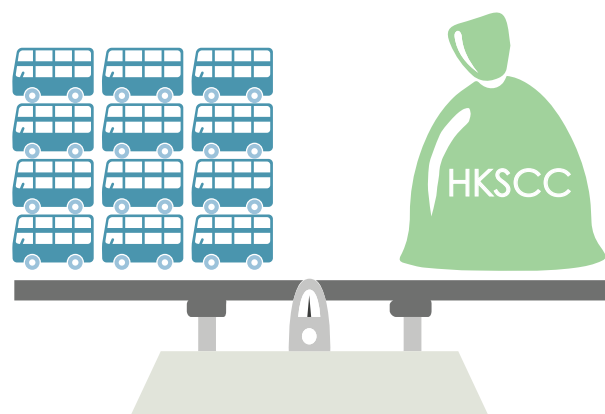
The total electricity consumed is otherwise able to power 126,328 regular households for a year

*The average household electricity consumption in Hong Kong is about 4,800 kWh per year*



**1,802,542 kWh** of **renewable energy** was generated on campuses

Produced **13,086** tonnes of **waste that went to landfills**



The weight of total waste generated is equivalent to that of 872 double decker buses

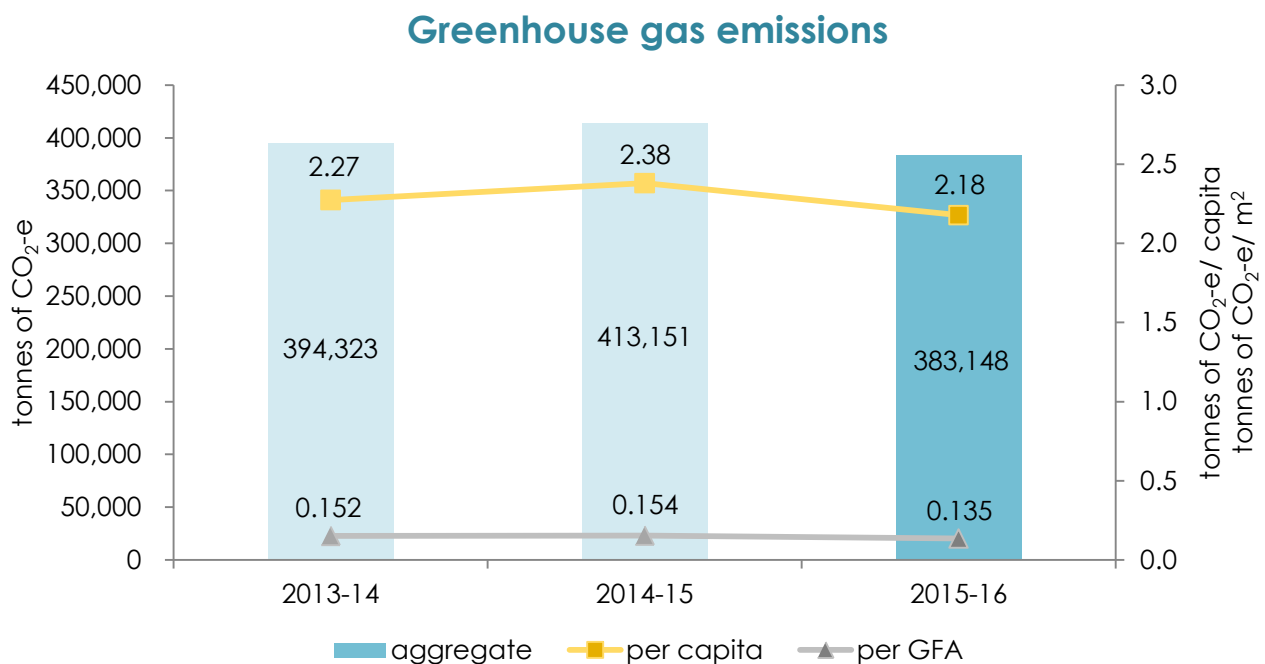
*The average weight of a double decker buses in Hong Kong is 15 tonnes*

**1,600** tonnes of **material diverted from landfills** for recycling and reuse



Overall picture

# Greenhouse gas emissions



## Comparison between 2014-15 and 2015-16

**Σ -7.3%**

**Aggregate figure**



**-8.5%**

**Per capita intensity**



**-12.2%**

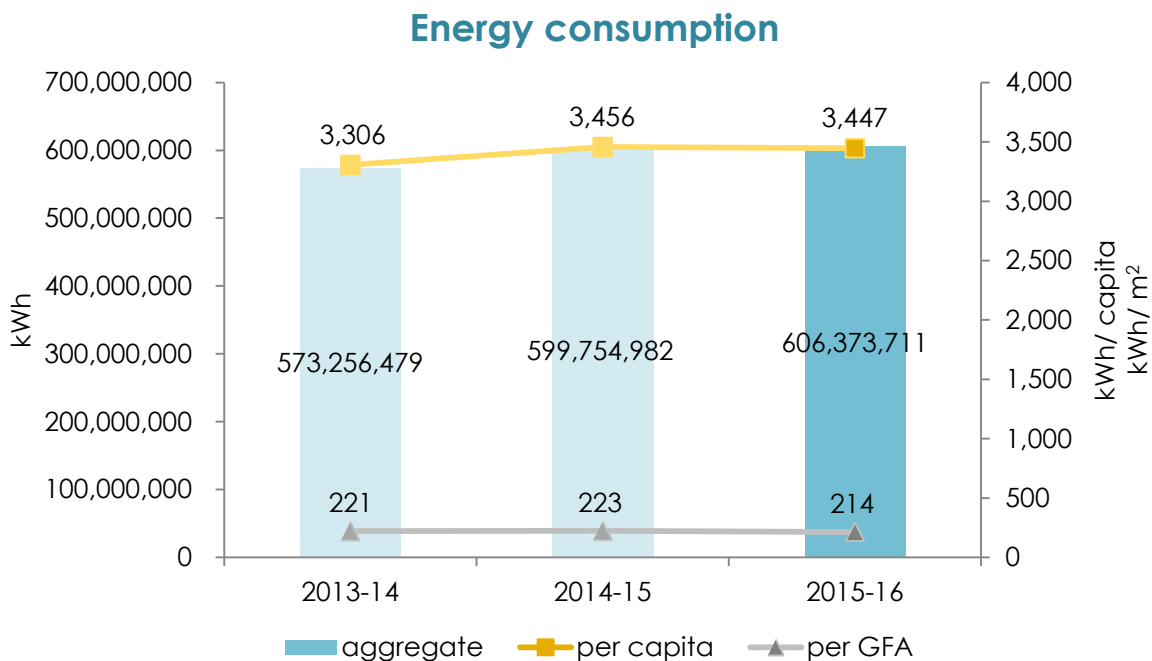
**Per GFA intensity**

Within the reporting period of 1 July 2015 to 30 June 2016, the total, per capita and per GFA greenhouse gas (GHG) emissions observed decrease by 7.3%, 8.5% and 12.2% respectively compared to the previous reporting period, as shown in the above figure. Such decline was largely due to the change of CLP emission factor from 0.64 (2014-15) to 0.54 (2015-16), which caused an obvious reduction in GHG emission for universities within the electricity supply area of CLP. Upgrades to more energy-efficient facilities and chillers upon completion of renovation work in certain institutions have also contributed to the reduction in GHG emissions.



Overall picture

# Energy consumption



**Comparison between 2014-15 and 2015-16**

**Σ +1.1%**

**Aggregate figure**



**-0.3%**

**Per capita intensity**



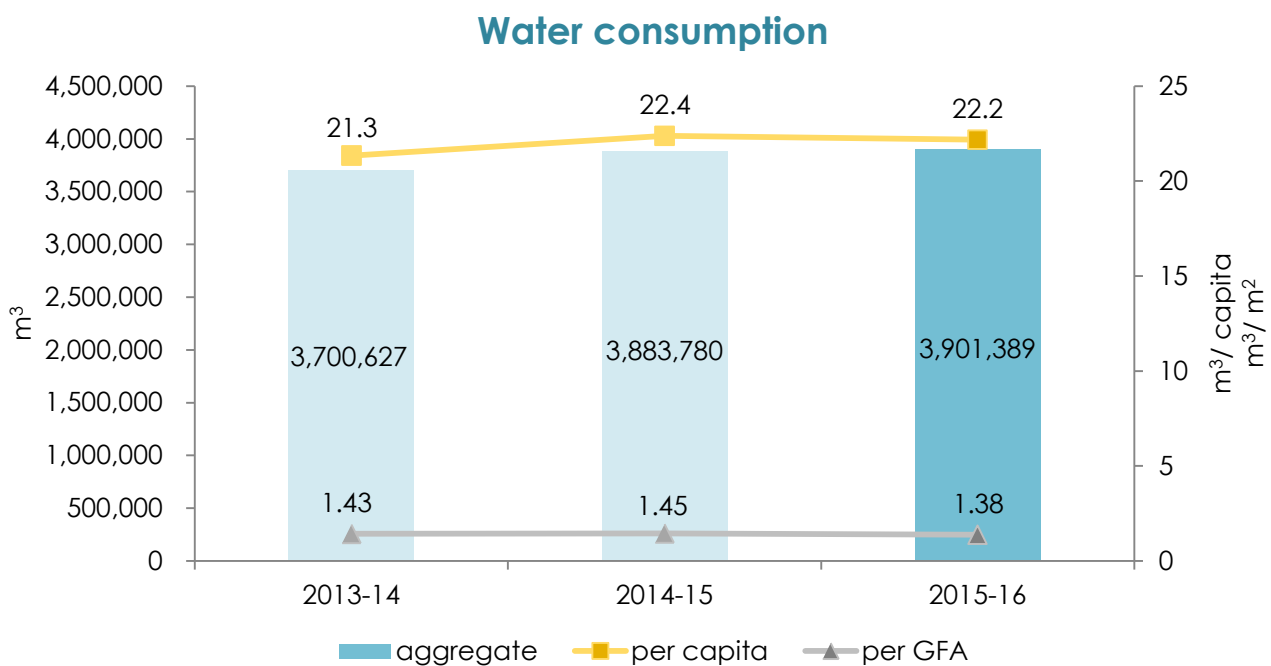
**-4.2%**

**Per GFA intensity**

Closely correlated to GHG emissions, the per capita and per GFA energy consumption of the tertiary education sector also recorded a 0.3% and 4.2% drop respectively, coupled with a marginal increase in total energy consumption by 1.1% as illustrated in the figure above. The decrease in per GFA energy use signified an improved building energy efficiency in our campuses by retrofitting works and replacement with more energy-efficient facilities; whereas the slight increment in energy use was mainly the result of increase in activities and facilities utilisation on campuses for teaching, learning and research purposes, as well as the establishment of new buildings and amenities in different institutions.

Overall picture

# Water consumption



**Comparison between 2014-15 and 2015-16**

**Σ +0.5%**

**Aggregate figure**



**Per capita intensity**

**-0.9%**



**Per GFA intensity**

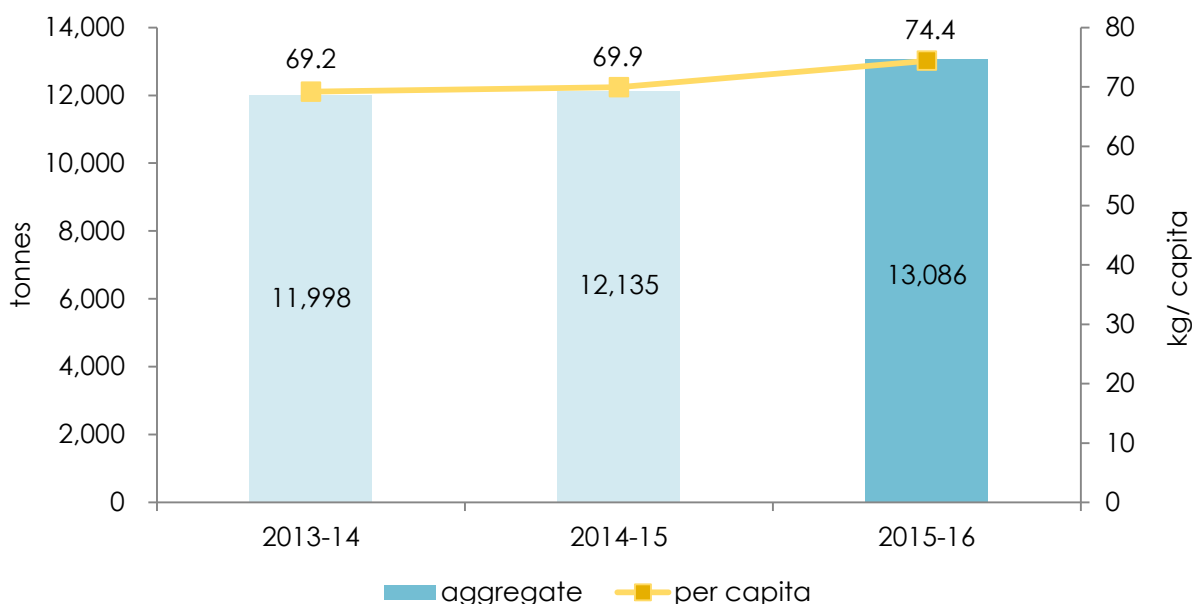
**-4.9%**

The total fresh water consumption has recorded a slight 0.5% increment compared to 2015-16 as shown in the figure above. Increased usage of water-cooled chillers in new facilities accounted for such accretion. Nevertheless, water usage per capita and per GFA have dropped 0.9% and 4.9% respectively, due to a more significant increase on FTE staff and students and GFA to balance out the fresh water use increment.

Overall picture

# Municipal solid waste

**Municipal solid waste disposed of at landfills**



**Comparison between 2014-15 and 2015-16**

**Σ +7.8%**

**Aggregate figure**



**+6.4%**

**Per capita intensity**

A prominent increment of 7.8% of the total municipal solid waste (MSW) disposed of at landfills was observed and illustrated in the above figure, which was primarily due to the expansion of reporting boundary to cover a wider range of campus facilities and amenities. Along with the reporting boundary extended to covering outside contractors and additional caterers, the per capita MSW disposed of at landfills also recorded a significant increase of 6.4%.



# 3. Collaborative accomplishments and success



# Dialogue with Environment Bureau

## A sharing session with Secretary for the Environment, Mr. WONG Kam Sing, JP, on “Hong Kong’s response to COP21 Paris Agreement on climate change” (10 June 2016)

Mr. Wong Kam Sing, JP, Secretary for the Environment, together with Mrs. Dorothy P.F. Ma Chow, Principal Assistant Secretary for the Environment (Energy), Mr. Desmond S.L. Cheng, Assistant Secretary for the Environment (Energy), Mr. K.K. Li, Senior Project Engineer (Energy), and Ms. Michelle W.T. Au, Political Assistant to Secretary for the Environment, attended the sharing session on “Hong Kong’s response to COP21 Paris Agreement on climate change” at the HKSCC’s meeting held on 10 June 2016.



Mr. Wong shared his insights from the Paris Climate Conference (COP21) held in Paris, France in December 2015. The Hong Kong Government had set a clear target of achieving an overall reduction of 40% of energy intensity by year 2025. An energy saving plan represented by “4Ts”: “Timeline, Target, Transparency, and Together” for the building sector for 2015-2025 was put forward.

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The HKSCC shared issues/concerns with the ENB, including policies and regulations on energy and green building, proposed municipal solid waste charging schemes, continuous development of innovative education programmes and outreach activities to track and foster behavioural change, promoting green procurement, take-back provisions for manufacturers of computers and electrical equipment, and revising energy laws to improve transparency.

ENB called for the collective and united effort of tertiary education institutions to build a greener Hong Kong by working hand in hand together. HKSCC expressed that it will fully support the Government and its initiatives in promoting sustainability and combatting climate change.

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## Follow-up discussion with Environment Bureau and Electrical and Mechanical Services Department (6 July 2016)

TFSP welcomed Mr. K.K. Li, Senior Project Engineer (Energy) of the Environment Bureau and Mr. George Liu, Senior Engineer of the Electrical and Mechanical Services Department to the 8th Meeting of TFSP on 6 July 2016.

The two officials shared the Hong Kong Government's commitment in carbon reduction and addressing climate change, stirring thoughts and discussion afterwards on green building practices, government support on implementing cutting-edge renewable energy on campuses and fuel mix for energy generation.

The Government team also reiterated their aspiration in engaging the tertiary education sector to furthering sustainability initiatives by calling for the HKSCC's support for the Government's Energy Saving Charter 2016 and Energy Saving Championship Scheme.



## Special meeting with the Environment Bureau on food waste reduction (2 Nov 2016)

Mr. Wong Kam Sing, JP, Secretary for the Environment, Mr. Donald C.K. Tong, JP, new Permanent Secretary for the Environment, ENB and Director of Environmental Protection, EPD and Mr. Elvis W.K. Au, Assistant Director (Nature Conservation and Infrastructure Planning), EPD met with the HKSCC at a special meeting on 2 November 2016 to discuss the policy direction of food waste reduction in the tertiary education sector.







The Government, recognising the important role of HKSCC in representing the tertiary education sector, took the initiative to consult HKSCC on the implementation and promotion of food waste reduction. Currently, modern large-scale waste-to-energy Organic Waste Treatment Facilities (OWTF) Phase I are being set up at Siu Ho Wan, north Lantau Island by the EPD which will be in operation in 2017 to treat organic food waste generated in Hong Kong. Universities that fall into the catchment of OWTF Phase I were recommended to deliver food waste over for treatment and recycling, or if otherwise to arrange on-campus or off-site food waste treatment. Fruitful and constructive exchanges of ideas and discussions were made on overcoming challenges and obstacles, exploring potential opportunities and incentive schemes in relation to food waste reduction at the meeting.





# Collaboration with external parties

## Sustainable purchasing – conversation with Inter-Institutional Purchasing Liaison Group

To continue our efforts in ensuring sustainable use of resources following the development of the Sustainable Purchasing Framework in 2015, the HKSCC extended the dialogue with the Chairperson of IPLG, Ms. Tracy Wu (Assistant Director of Finance of HKBU) at one of the TFSP meetings on 25 April 2016.

Discussion was made on revising current joint-university tender clauses that would promote sustainability in the purchase of office items. Other green specifications were also suggested to be included in the tender assessment, such as take-back/recycling/disposal arrangement especially concerning electronic equipment, minimisation of packaging and disposal options for unwanted furniture and equipment.

Future collaboration and conversation with IPLG are expected as we continue to propel sustainability purchasing in our campuses.

## Sustainable IT practices – conversation with Joint Universities Computer Centre

Besides offering sustainability considerations for joint-universities tender specifications and contract clauses, the HKSCC also conversed with the JUCC, which organised the procurement of personal computers in the past and oversees joint tendering for the procurement of toner cartridges at present.

The administrator of JUCC, Ms. Anita Chan, attended one of the TFSP meetings on 22 September 2016 to discuss and explore with members potential collaboration opportunities, one of which being the possibility of a shared data centre amongst the member institutions to improve energy efficiencies of server rooms.

Ms. Chan also brought the members' attention to suggesting areas for collaboration, such as recommending a Consortium-wide policy for centralising printing functions for energy efficiency, adopting default energy-efficient features for desktop computing, recommending that all public use computers on campuses be transitioned to "thin client" terminals, and recommending that all universities adopt a best-in-class energy performance standard for data centres.

HKSCC will continue the discourse with JUCC to advance sustainable IT practices on campuses.



## 4. Looking forward

The HKSCC has had a fruitful year of successful endeavours, including exchange of valuable ideas and insights with the Secretary for the Environment, Mr. Wong Kam Sing, JP, and officials of the ENB, and collaborative partnerships and ongoing conversations with IPLG and JUCC on sustainability initiatives.

Looking ahead, we will continue to explore potential collaborative opportunities in promoting sustainable development in Hong Kong's tertiary education sector and society through our platform. Specifically, we are hoping to collect and compile a list of best green practices amongst our member universities for future reference and benchmarking. At the societal level, we will fully support the Government's initiatives in maximising energy efficiency and reducing food waste in Hong Kong for the coming years.

With concerted efforts, we will work towards a better, brighter, and greener future.





# 5. Appendices

## Appendix 1 – HKSCC 2016 Meeting Schedule

Meeting	Date	Major discussion items
18th Meeting	24 March 2016	<ul style="list-style-type: none"> <li>Review of the HKSCC annual report framework</li> <li>Major focuses of the year for Task Force on Sustainability Performance</li> </ul>
19th Meeting	10 June 2016	<ul style="list-style-type: none"> <li>Visit by the Environment Bureau and sharing on Hong Kong's response to for the COP21 Paris Agreement</li> <li>Standardisation of the HKSCC annual report framework</li> </ul>
Special meeting with the Environment Bureau	2 November 2016	<ul style="list-style-type: none"> <li>Discussion on the policy direction of food waste reduction in the tertiary education sector</li> </ul>
20th Meeting	14 December 2016	<ul style="list-style-type: none"> <li>Review of the draft HKSCC 2016 Annual Report</li> <li>Conversation with IPLG and JUC</li> </ul>



# Appendix 2(a) – Membership of the Hong Kong Sustainable Campus Consortium 2016

Institution	Representative	Position
CityU	Prof. Chelan LI Linda <i>(January - August 2016)</i>	Associate Provost (Strategic Planning), Department of Public Policy/Office of the Provost
	Prof. CHAN Chak Keung <i>(August 2016 - present)</i>	Dean, School of Energy and Environment
	Mr. TUNG Chun Hung Tony	Facilities Manager, Campus Development and Facilities Office
CUHK	Prof. FUNG Tung	Associate Vice-President, Professor, Department of Geography and Resource Management
	Ms. HO Yuen Yi Vivian	Director of Campus Planning and Sustainability, Campus Planning and Sustainability Office
EdUHK	Dr. TSANG Po Keung Eric	Associate Professor, Department of Science and Environmental Studies
	Mr. CHU Chung Keung Dominic	Director, Estates Office
HKBU	Mr. Andy LEE Shiu-chuen <i>(Convenor)</i>	Vice President (Administration) and Secretary
	Dr. CHUNG Shan Shan	Assistant Professor, Department of Biology
	Mr. KWOK Tat Man Michael <i>(Secretary)</i>	Assistant Director of Estates and Head of Environmental Health and Safety Unit, Estates Office
HKU	Dr. Steven J. CANNON	Executive Vice President (Administration and Finance)
	Dr. HUI Chun Man Sam <i>(January - August 2016)</i>	Lecturer, Department of Mechanical Engineering
	Dr. Kaimin SHIH <i>(November 2016 - present)</i>	Associate Professor, Department of Civil Engineering
HKUST	Prof. LAU Kai Hon Alexis	Director and Associate Professor, Department of Civil Engineering
	Mr. Davis BOOKHART	Senior Manager and Head, Sustainability Unit
LU	Prof. Mark A. MCGINLEY	Professor, Head of Science Unit, Core Curriculum and General Education Office
	Mr. Ian WOO	Acting Comptroller
PolyU	Prof. WAI Ping Kong Alexander	Vice President (Research Development), Chair Professor of Optical Communications
	Mr. Joseph CHAN	Head, Campus Sustainability Office

## Appendix 2(b) – Membership of the Task Force on Sustainability Performance 2016

Institution	Representatives	Position
CityU	Mr. TUNG Chun Hung Tony	Facilities Manager, Campus Development and Facilities Office
CUHK	Ms. HO Yuen Yi Vivian	Director of Campus Planning and Sustainability, Campus Planning and Sustainability Office
EdUHK	Dr. TSANG Po Keung Eric	Associate Professor, Department of Science and Environmental Studies
HKBU	Mr. KWOK Tat Man Michael <i>(Secretary)</i>	Assistant Director of Estates and Head of Environmental Health and Safety Unit, Estates Office
HKU	Ms. Ann KILDAHL	Sustainability Manager, Sustainability Office
HKUST	Mr. Davis BOOKHART <i>(Chairperson)</i>	Senior Manager and Head, Sustainability Unit
LU	Prof. Mark A. MCGINLEY	Professor, Head of Science Unit, Core Curriculum and General Education Office
PolyU	Mr. Joseph CHAN	Head, Campus Sustainability Office

