Updates from The University of Hong Kong

Professor Lap-Chee Tsui
Vice-Chancellor & President
3 October 2010
Overview

- Hong Kong’s Energy Challenges
- HKU and Sustainability – Review and Update
- Relevant Research at HKU
- Student Initiatives
Energy Challenges - Hong Kong SAR

- **Local context**
  - Small (1,100 sq. km)
  - Population: 7 million
  - Highly urbanized
  - Service Economy

- **Energy Profile**
  - Electricity consumption in 2009: 162,799 terajoules
  - Coal & Natural gas: approx. 77%
  - Nuclear power (imported): approx. 23%
  - Buildings - approx. 90% of electricity use
  - Car ownership low; Public transport efficient

- **Challenges**
  - Carbon-heavy fuel mix, few renewable resources
  - Space constraints call for greater cross-border cooperation
Carbon Reduction Plan (proposed)

- 50-60% reduction in carbon intensity by 2020 (2005 baseline)

- Change in Fuel Mix for Electricity Generation
  - Coal-fired power plants to be retired by 2030
  - Nuclear power increases from 23 to 50%
  - Natural gas increases from 23 to 40%

- Conservation
  - Tightening of standards for building energy efficiency and transport

- Absolute reduction in CO$_2$ emissions of 19-33%

- Per capita reduction from 6.2 tonnes to 3.6 - 4.5 tonnes
Hong Kong Footprint?
Broader Vision - Regional Opportunities
HKU - A brief introduction

• Founded in 1911
  – The Hong Kong College of Medicine, 1887
• 10 Faculties: Architecture, Arts, Business & Economics, Dentistry, Education, Engineering, Law, Medicine, Science, and Social Sciences
• 12,000 undergraduates
• 9,700 postgraduates (RPg, TPg)
• 6,000 non-local students from 60 countries
  – 55% postgrad + 15% undergrad
  – 900 exchange students from 200 institutions
• 1,000 full-time academic staff
  – 45% ‘non-local’ (from 57 countries)
• Working and teaching language: English
HKU – Challenges & Opportunities

• New Academic Structure in 2012
  – 4-year Undergraduate Program (Hong Kong-wide)
• Expansion
  – Student Body (including non-locals)
  – Faculty
  – Campus
• Major Curriculum Re-design
  – Arts & Humanities
  – Scientific & Technological Literacy
  – Global Issues
  – China: State, Culture & Society
  – Experiential Learning
Centennial Campus Development
Sustainability @ HKU – Early Years

• 1989
  – MSc in Environmental Management

• 1991
  – HKU signs Talloires Declaration

• Launch of energy management efforts
  – Savings a/o 1Q 2010 99,000 t CO$_2$e (HK$166M)

• Sustainability: a core principle of new Master Plan

• 2002-07
  – Sustainability Report (’02)
  – Sustainability Goals & Policy (’05)
  – Community outreach: Lung Fu Shan Environmental Education Centre
  – Students attend UNFCCC (Bali)
  – Green Fund for climate change projects
• Sustainability Committee & Sustainability Office established
• HKU joins AASHE, ISCN
• Campus carbon footprint (‘02-‘07) published
• Building retrofitting program initiated in cooperation with CCI
• Desk-side recycling program expands campus wide
• New incentive system for Hall Energy Saving
• “Asian Youth Climate Summit” at HKU
• Students join Green Long March; UNFCCC (Copenhagen)
• Executive environmental education program commissioned by HSBC
Sustainability @ HKU - 2010

- Consultants’ review – completed
  - Carbon footprint
  - Water footprint
  - Waste management practices
- Building retrofitting/EPC – proposed
- Local and International Outreach – underway
  - Hong Kong Declaration
  - Hong Kong Sustainable Campus Consortium
  - ISCN Charter
- On-campus Activities - new
  - “Green Connections” (lecture & film series)
  - Student Internships
- Communications upgrades – in progress
  - Sustainability Website
  - On-line Sustainability Report
- Next Steps
  - Target Setting
  - Campus-wide Action Plan
Multidisciplinary Research

- China-West Studies
- Contemporary China
- China Business & Economics
- Infection & Immunology
- Development & Reproduction
- Healthy Ageing
- Cancer
- Biomedical Engineering
- Clean Energy
- Sustainable Environment
- Molecular Materials
- Genomics
- Drug
- Nano-technology
- Computational Sciences
- Information Technology

HKU 2008 Strategic Research Areas & Themes

- Public Health
- Law, Policy & Development
- Sciences of Learning

Frontier Technology

Environment

Community

Biomedicine
Initiative on Clean Energy & Environment

- A focal point for multi-and interdisciplinary research on clean energy to improve the environment and with a focus on the issues relevant to Hong Kong and Mainland China
Bridging advanced research and practical concerns

• Biological Sciences
  – Genome research for biofuels

• Information Technology
  – Smart Grids

• Materials Sciences
  – Nanotechnology for new batteries and fuel cells
Emerging Strategic Research Theme

- Earth as a Habitable Planet
The Swire Institute of Marine Science

• A HKU research facility, situated on the Cape d'Aguilar peninsula, on the shores of Hong Kong's only Marine Reserve

• SWIMS research focuses on the marine biodiversity of the South China Sea

• WATERMAN Project – An innovative environmental knowledge base for HK coastal waters; e.g., to monitor and forecast water quality of beaches in HK
Student Initiatives

- Greenwood
  - Established under the Student Union in 1993
- Climate Chance
  - Formed by a group of HKU students in early 2008 after attending the United Nations Framework Convention on Climate Change meeting in Bali
- Environment Life Sciences Society
  - Formed by students majoring in Environ Life Sci
- Envision Hong Kong
  - Student Summit in Oct this year
- Ecobus
  - Eco-education for the public and secondary School students
- Earth Hour, No-Air Con Day, ...
More Student Initiatives ...

Humanity in Focus

• Talloires Network Global Citizenship Award 2010
More Student Initiatives ...

- Talloires Network Global Citizenship Award 2010
- Upcycling – Déjà vu Creation
- Poster at MAGEEP by Stephanie Wong and Elysie

Humanity in Focus
Thank you 謝謝 Merci ありがとう Gracias Danke 감사합니다 Grazie Tack Dank u Obrigado Kiitos Вы Σας ευχαριστούμε