The Ecosystem of Knowledge Transfer in Green Technologies

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Vice President,
Hong Kong Science & Technology Parks Corp.

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Hong Kong...

Global Innovation Index
World Top 10

Recognition by Ministry of Science and Technology of PRC
National High-Tech Industrialisation (Partner) Base for
Green Technology
National Modern Services Industrialisation (Partner) Base

Forbes: The Only Asian City In the Top Tech Capital to Watch
Hong Kong – the offering

- An International Business City – Dynamic and Vibrant
- Comprehensive Legal and Financial Infrastructure
- IP Protection
- Convergent of Human Capital from Worldwide
- Human Capital – Work Ethic and Low Turnover Rate
- World Class Universities- Well-trained Graduates plus Graduate Researchers
Hong Kong Science & Technology Parks Corporation

Provisional Hong Kong Science Park Company + Hong Kong Industrial Technology Centre Corporation + Hong Kong Industrial Estates Corporation

on 7 May 2001.
Hong Kong Science and Technology Parks Corporation (HKSTPC)

**Vision**
Transforming innovation and technological advancement into value creation that benefits Hong Kong, Mainland – and the world.

**Mission**
In propelling Hong Kong towards a world-class hub for selected technologies, we provide facilities, services and a dynamic environment that enable companies to nurture ideas, innovate and develop.
Hong Kong Science & Technology Parks Corporation

Hong Kong Science Park
(10,392 employees)

InnoCentre
(1,143 employees)

Tai Po Industrial Estate
(13,000 employees)

Tseung Kwan O Industrial Estate
(9,100 employees)

Yuen Long Industrial Estate
(3,700 employees)
Hong Kong Science Park

Facilities and Services to support R&D and product commercialisation
Hong Kong Science Park

Phased development to cater to the needs of science and technology sector...
Hong Kong Science Park

Perfect Ecosystem for Clustering Synergy
Hatching Innovations that Benefit our Community
Hong Kong Science Park

Perfect Ecosystem for Clustering Synergy
Hatching Innovations that Benefit our Community
Cluster Distribution

<table>
<thead>
<tr>
<th>Service</th>
<th>Company</th>
<th>Staff</th>
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<tbody>
<tr>
<td>Partner companies</td>
<td>335</td>
<td>9,678</td>
</tr>
<tr>
<td>Incubatees</td>
<td>156</td>
<td>714</td>
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<tr>
<td>Total</td>
<td>491</td>
<td>10,392</td>
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As at 31 Oct 2014
58 Green Tech Companies in Science Park

- Philips
- CREE
- Fujitsu
- Infineon
- Fuji Electric
- Johnson Electric
- TCL
- Beghelli
- Rohde & Schwarz
- Sierra Wireless
- Detroit Electric
Phase 3 Objectives

Establish HK as the Green Tech Hub

- Plan and develop Phase 3 to incorporate the latest green technologies, sustainable building design and management practices, with a **net zero carbon target**

- As a **showcase** for implementing sustainable practices in Hong Kong

- As the catalyst to develop Hong Kong and Pearl River Delta Region as **the hub for green technology**

- **Recognised as a leader in:**
  - Green Building Award 2012 – *Grand Award New Building Category [Building Project under Design]*
  - Hong Kong Green Building Council – *BEAM Plus (New Building) Provisional Platinum*
Grand Plaza – Facilitates Community Collaboration
Fundamental Sustainable Design Features
Novel Sustainable Design Features

Photovoltaic – PV (高效率光伏發電系統)
Real Time Energy Usage Feedback System (for partner companies)
Optimized disposition, separation layout and orientation of buildings
Display - Monitoring of energy saving and generation
Extensive landscape area 40% of site area
Enhanced air ventilation near pedestrian zone / landscape deck / communal garden
Cycle enabled provisions (parking, shower and changing room)

High performance double low-e glazing (高效能中空雙層玻璃)
Optimized window-wall ratio to 40% (優化窗牆比例控制至40%)
Efficient District Cooling System (高效能區域冷水系統)
Thermal and flow meters to enable AC demand charging (使用熱電式儀表及氣體流量計監控冷氣系統)
Ultra-efficient AC system (decoupling of sensible and latent load) (高效率空調系統，分離感熱及潛熱負荷)
Optimized natural lighting and courtyard (自然採光及優美的綠化露天庭院)
Hybrid and Natural Ventilation – R&D office and main lobbies (混合型通風系統 – 研發辦公室及大堂)
Demonstration Initiatives and Educational Features
Roadmap to Sustainability
Laboratories and Technical Centres

**Electronics**
- IC Design Centre
- IP Servicing Centre
- Probe & Test Development Centre
- IC Failure Analysis Lab
- Reliability Lab
- 3D SiP Lab

**IT/Telecom**
- Wireless Communications Test Lab
- LTE Joint Test Lab

**Precision Engineering**
- Materials Analysis Lab
- Rapid Prototyping Lab (To be opened in Phase 3)

**Biotech**
- Biotech Support Centre

**Green Tech**
- Solar Energy Technical Support Centre
- Solid State Lighting Lab
The Road towards Entrepreneurship...

- **Soft Landing Programme**
  - Explore business opportunities in Hong Kong

- **Incubation Programmes**
  - Range from 18 months to 4 years
  - Full support to build up a tech company in 5 key clusters

- **Angel Investment**
  - Regular angel investment matching with Hong Kong Business Angel Network (HKBAN)

- **Venture Capital Partnership**
  - Bridge Venture Capital firms and investment-ready tech companies

- **LEAP**
  - Foster high potential companies to grow into regional / global enterprises
Comprehensive Support

Network Collaboration
- Intra Park Collaborations
- Exchange and Mingling
- Awards/Competitions
- Media Interviews

Promotion & Publicity
- Media Interviews
- Awards/Competitions
- Product Launch

Technology Support
- IP Services
- Laboratories
- First@Science Park
- Technical & Management Training
- Talent Sourcing
- Tapping University Resources
- Mentorship
- Angel/VC Financing

Organisation Growth
- Laboratories
- China Collaborations
- External Collaborations
- Intra Park Collaborations

Intra Park Collaborations
- Technical & Management Training
- Talent Sourcing
- Tapping University Resources
- Mentorship
- Angel/VC Financing

Intra Park Collaborations
- Media Interviews
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HKSTPC – VC Partnership Programme
Incubation Programmes

Statistics and Achievements

**Achievements**

- **Current**
  - 151

- **Graduates**
  - 332

- **Still in Business**
  - 246

- **IP Filed**
  - 765

- **Awards**
  - 282

- **Govt Funding Cases**
  - 198

- **Angel Cases (>HK$400,000)**
  - 152

- **IPO/Listing**
  - 4

- **M&A**
  - 16

As at 30 Sept 2014
# Financial Support to R&D by Innovation & Technology Commission

## Innovation & Technology Fund (ITF)

<table>
<thead>
<tr>
<th></th>
<th>Innovation &amp; Technology Support Programme (ITSP)</th>
<th>University-industry Collaboration Programme (UICP)</th>
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<tr>
<td></td>
<td>Platform Projects</td>
<td>Collaborative Projects</td>
</tr>
<tr>
<td>Industry Investment</td>
<td>10% of project cost</td>
<td>50% of project cost</td>
</tr>
<tr>
<td>ITF</td>
<td>90% of project cost</td>
<td>50% of project cost</td>
</tr>
<tr>
<td>Industry to own IP</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
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**Research & Development Cash Rebate Scheme**
HK-PRD
Technology/ Innovation Corridor

University of Cambridge
World Rank #2

University of Oxford
World Rank #5

University College London
World Rank #4

ETH Zürich
World Rank #13

EPFL
World Rank #29

University of Edinburgh
World Rank #21

Lund University
World Rank #71

LMU München
World Rank #60

University of Glasgow
World Rank #54

Stanford University
World Rank #15

MIT
World Rank #1

Cornell University
World Rank #14

Georgia Tech
World Rank #88

Carnegie Mellon University
World Rank #49

Reference: QS World University Rankings 2012/2013
Mainland Collaboration

- **Incubation Network**
- **Collaboration Network** – National High-tech Industrialisation Base for Integrated Circuits

- **3GPP Testing – Shenzhen MORLAB**
- **Shenzhen – HK Innovation Circle**

Chinese text:
- **Zhongguancun Strategic Alliance**
- **Digital TV reception standards – Tsinghua University and ASTRI**
- **Baoding Renewable Energy Industrialisation Base Collaboration – National High-Tech Industrialisation Base for Green Tech (Partner)**
- **Nanjing Software Valley Strategic Alliance**
- **Guangdong-Hong Kong (Nanhai) Technology Upgrade Experimental Zone**
- **Shunde Guangdong-Hong Kong Innovation Centre**
- **LED R&D – Guangzhou Research Institute of Optics Mechanics Electricity Technology**
- **Guangzhou Development District Green Channel for Biotech Specimen**
- **Shenzhen Qianhai**
- **Dongguan Songshan Lake**
- **Guangzhou Nansha**
- **Shenzhen Nanshan**
IP Trade Survey conducted by HKTDC in 2012 among 10 Asia-Pacific cities including Singapore and Shanghai

- HK was ahead of other cities in IP creation, IP modification and related services
- HK has excellent geographical location and institutional structure
- HK was viewed by many as best location for licensing, copyright trading and technology transfer