



Singapore: A Global Hydrohub

Singapore International Water Week 2010

Pre-event Media Briefing

16 June 2010

Evolution of the Water Industry

THEN

- One of most water-scarce countries in the world
- 2 water sources: local catchment and imported water



NOW

- Holistic water management (e.g. water leakage < 5%)
- 4 national taps, including NEWater & desalinated water
- Water conservation culture

Key PUB Projects Prior to 2006

2003: Hyflux awarded Singapore's first Seawater Desalination Plant Project

2005: Keppel awarded DBOO Ulu Pandan NEWater Plant Project

2006: Strong Commitment from the Government



Prime Minister Lee Hsien Loong

PM to head new research and innovation body

Research council approves 3 key areas to boost economy

\$1.4b set aside for next 5 years; areas expected to create 86,000 jobs by 2015

By CHANG AI-LIEN & DANIEL LOO

As for investments in water technologies, Singapore could leverage on the early investments it made to meet domestic water shortages. The decision of experience would stand it in good stead as water shortages worsened worldwide. In terms of interactive and digital media, he added, Singapore should exploit its strong IT foundation, intellectual property regime and infrastructure, as well as its multicultural and multilingual society to grow the sector. Another key effort is the Campus for Research Excellence and Technological Enterprise — a vehicle to bring top international re-

searchers to Singapore. The centre is expected to employ around 400 researchers and allow MIT faculty, researchers and graduate students to collaborate with their counterparts here and around the world. Said PM Lee: "The plans are starting to take shape but this is just the beginning of a long journey." The work continues, and the council will meet again next March, he added.

- Environment & Water industry declared as strategic growth area
- Commitment of S\$ 330M to grow Singapore as a Global Hydrohub
- S\$ 1.7B VA and 11,000 jobs by 2015

Formation of Environment and Water Industry Programme Office (EWI)

Key Agencies:



Ministry of the Environment and Water Resources



Water for All: Conserve, Value, Enjoy



Innovation as Key Growth Driver

Cluster Development

- Anchoring major foreign players
- Growing local companies, including start-up companies in EWT

Technology Development

- Environment & Water Research Programme (EWRP)
- Strengthening international R&D linkages
- Singapore as a global test-bed
- Encourage early adoption of new technologies in capital projects
- Bringing new technologies to the market
- Grooming talent

Internationalisation

- Government led initiatives e.g. joint R&D projects, trade missions, training, joint business councils, formation of SG Water Consortium
- Marketing & Branding of Singapore's Water industry e.g. through holding major international conferences and exhibitions

Vibrant Water Ecosystem Today

Over 70 water companies in the ecosystem

N. America

EU

Singapore

Asia Pac

Major R&D activities



Other Operations



Key Milestones

Year	Key Projects
2006	<ul style="list-style-type: none"> ▪ GE- S\$ 130M, 100 strong Global Water Technology Centre, Asia Pacific HQ
2007	<ul style="list-style-type: none"> ▪ Siemens- S\$ 60M, 60 strong Global Water R&D Centre, International HQ outside USA ▪ Black & Veatch- Asia Pacific HQ, Global Design Centre for Water ▪ Marmon- 100 man Carbon Filter Manufacturing Plant ▪ Deltares- S\$ 63M Environmental and Water R&D Centre ▪ Keppel- S\$ 50M Environmental Technology Centre
2008	<ul style="list-style-type: none"> ▪ Nitto Denko- Water Membrane Technical Centre ▪ DHI- Regional HQ, R&D centre
2009	<ul style="list-style-type: none"> ▪ Camp Dresser & Mckee- Asia Pacific HQ, Global Technical Centre for Water and Urban Planning ▪ Hyflux- S\$ 120M Global HQ and Manufacturing Hub, R&D centre ▪ NEWRI- Ecosystem for Environmental and Water Research ▪ Pall- Asia Pacific HQ
2010	<ul style="list-style-type: none"> ▪ Norit- Asia Pacific HQ ▪ Toray- Official Opening of Toray Singapore Water Research Centre in SIWW 2010



Corporate Global R&D Centres

Critical Mass of 14 Corporate Global R&D Centres

- GE Global Water Technology Centre
- Siemens Global Water R&D Centre
- Keppel Environmental Technology Centre
- Deltares Environment and Water R&D Centre
- DHI- NTU Water and Environment Research Centre and Education Hub
- Black & Veatch Global Design Centre for Water
- Hyflux-Marmon R&D Centre
- Memstar Membranes R&D Centre
- Nitto Denko Water Membrane Technical Centre
- Optiqua R&D Centre
- Camp Dresser & Mckee Neysadurai Technical Centre
- Sembcorp R&D
- Hyflux Global R&D Centre
- Toray Singapore Water Research Centre

Public sector Research & Development Centres

8 Public-sector R&D Centres

Research Institute/ Agency	Centres
NTU- Nanyang Environment & Water Research Institute 	<ul style="list-style-type: none">• Singapore Membrane Technology Centre• DHI- NTU Water and Environment Research Centre and Education Hub• Residues & Resource Reclamation Centre• Advanced Environmental Biotechnology Centre• Institute of Environmental Science & Engineering
NUS Environmental Research Institute 	<ul style="list-style-type: none">• Singapore Delft Water Alliance• R&D centre on Water Eco-Efficiency (To be announced in SIWW 2010)
PUB	Centre for Advanced Water Technology

Living Laboratory

94 testbedding projects conducted with PUB from 2006- 2010

Companies with Testbedding Projects

SIEMENS

Hyflux™



BÖRGER



United Envirotech Ltd

METAWATER

'TORAY'

AsahiKASEI



GrahamTek



Dayen



Ultra-Flo
JALSI WATER SOLUTIONS

HITACHI
Inspire the Next

TEIJIN
Human Chemistry, Human Solutions

kuraray



Living.
Improved daily.



leading in purification



Glowtec Group

HUBER
TECHNOLOGY

KURITA

Flexible Technology Company
NITTO DENKO

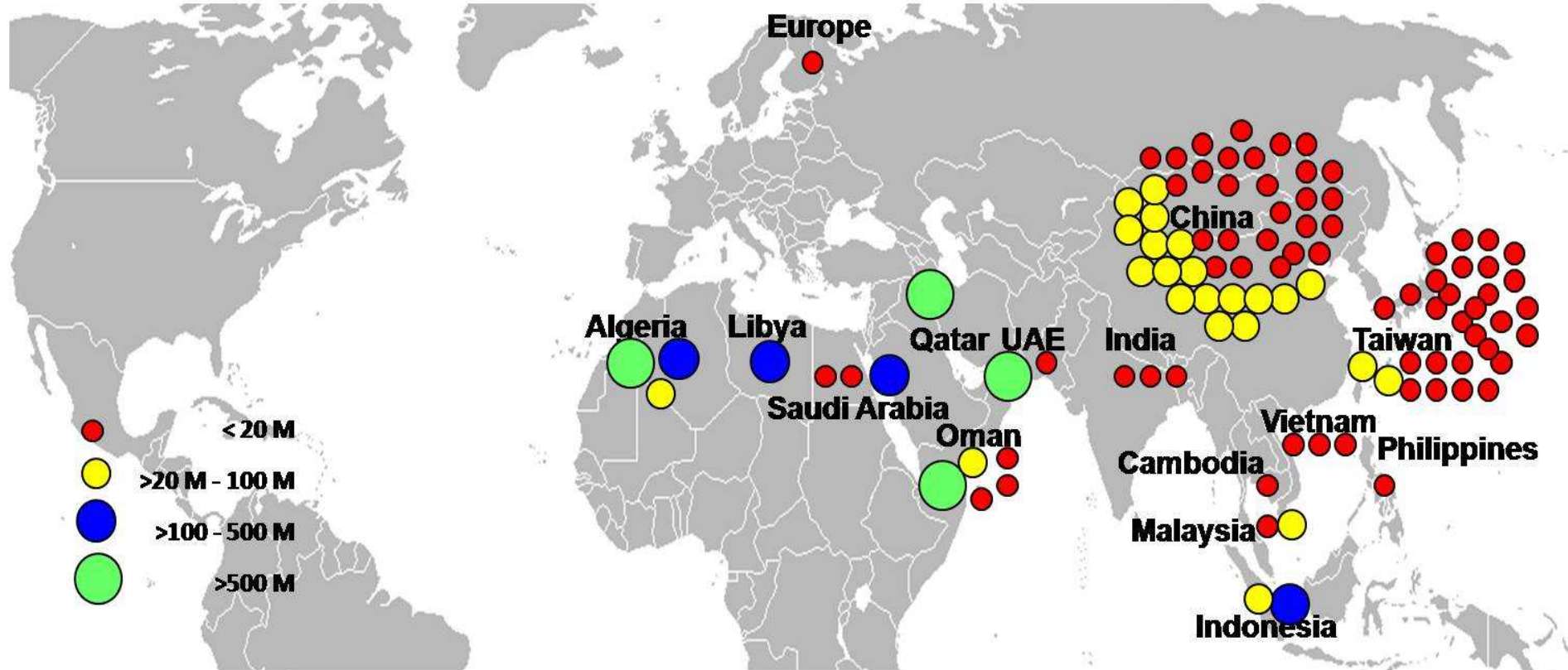


PULVERDRYER™
Pulverizing and Drying Systems

Choice location for testing and demonstration of cutting edge water technologies

Growth of Homegrown Companies

Singapore-based companies secured S\$ 7.7 Billion worth of overseas projects



Examples of Homegrown Water Companies



Specialised Manpower Development

350 postgraduates (PhD and Masters) trained

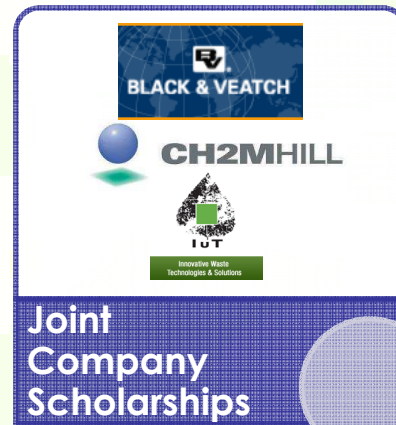
Sources



NATIONAL RESEARCH FOUNDATION
Prime Minister's Office, Republic of Singapore



NRF (EWT) PhD Scholarships



BLACK & VEATCH

CH2MHILL

IWT
Innovative Water Technologies & Solutions

Joint Company Scholarships



NEWRI
Nanyang Environment & Water Research Institute

NUS Environmental Research Institute

Public sector R&D Centres



NANYANG TECHNOLOGICAL UNIVERSITY

NUS
National University of Singapore

NTU and NUS

Singapore's Competitive Advantages

- Synergies from clustering of water companies
- Strong investment in research and development
- Singapore as a “Living Laboratory” for testing and demonstration of cutting edge water technologies
- Strong talent pool
- Our Whole-of-Government approach

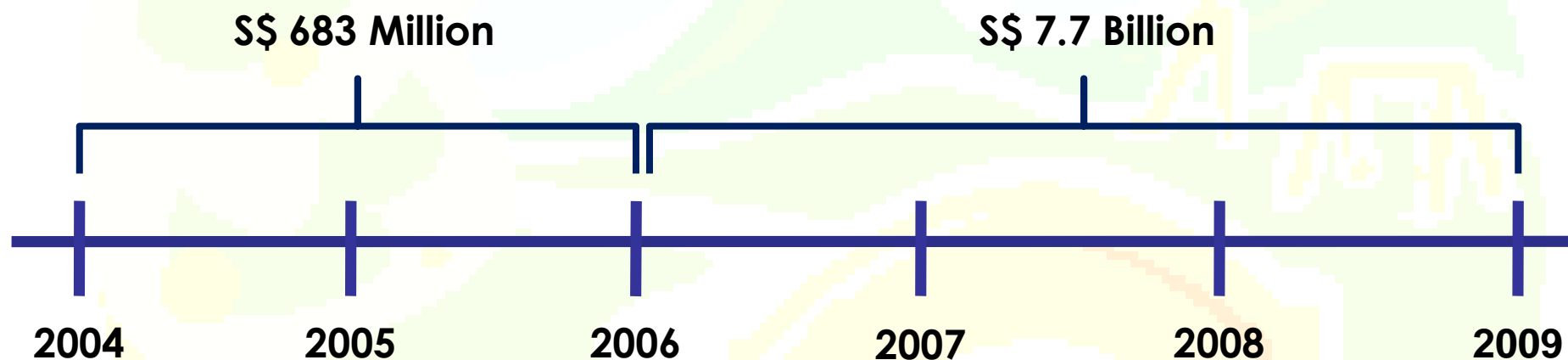
**Singapore is recognised as a Global Hydrohub
A premier location for Water Companies**

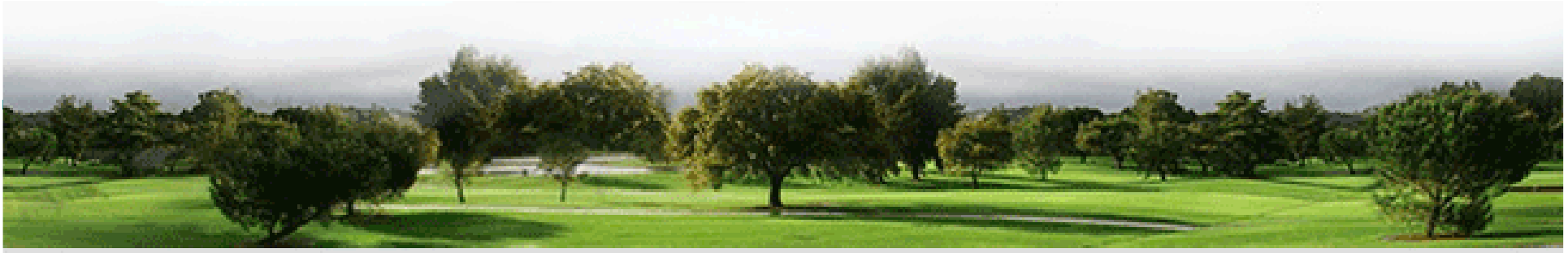
Summary of Key Figures

	2006	2010
Water Companies	50	>70
Corporate R&D Centres	1	14
Public-sector R&D Centres	2	8
Testbedding Projects	15	94

Summary of Key Figures

Value of Overseas Projects clinched by Singapore-based companies





Thank You