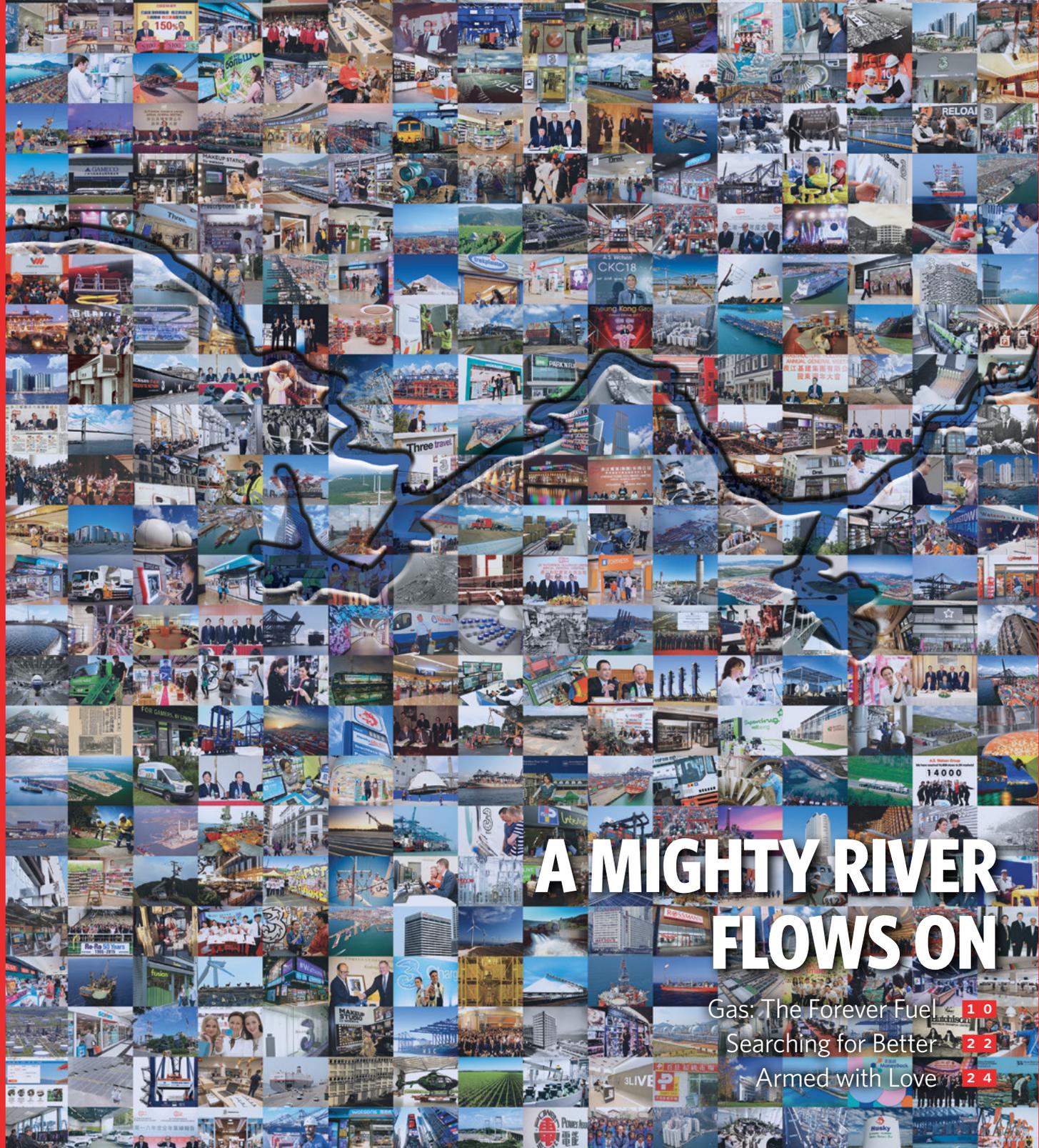


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#45 2018 

INTERNATIONAL JOURNAL OF THE  
CK HUTCHISON GROUP



## A MIGHTY RIVER FLOWS ON

Gas: The Forever Fuel **10**  
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**Sphere Magazine #45**  
September 2018

**Cover Image**

One photo, or even a hundred, cannot capture the richness of a story that starts with one man and a small plastics factory that becomes a global business empire. The animating spirit of Cheung Kong, also known as the River Yangtze, connects the people and events that comprise the CK Group history.

**There is no ending to this story.  
Only a bright future.**

W E L C O M E

# THE RIVER FLOWS ON

Let us be crystal clear: There are no endings in this story.

The story begins with a precocious boy in China who sees his world turned upside down by war. He makes his way to Hong Kong with his father, who dies while the youngster is still a boy - forcing him to become a man.

He gains the trust of his employer, his customers and then investors. His business empire grows. And grows. And grows.

There is a genius behind that growth. From creating products and finding customers to spotting opportunities and making deals, that genius grows the business around the world. Systems and structures are created and replicated to create the world's biggest ports business, a health and beauty retailer, a massive telecoms empire, an energy and infrastructure conglomerate, and so much more. The world's best and brightest are brought together in a global community under the Cheung Kong banner.

Underlying that community are morals and standards that guide the actions of over 300,000 staff in the CK Group. Beyond the employees who provide for themselves and their families, there are countless millions,

even billions, more whose lives are touched by these companies.

Mr Li Ka-shing is at the heart of this great enterprise. While stepping down from the formal role of Chairman of CK Hutchison and CK Asset, he will, in his own words, "be suiting up in a new coat of armour, working to effect positive change through my Foundation's philanthropic work in health, education and the relief of suffering". His guiding spirit very much drives both the Group and his charitable foundation in growing, creating and making the world a better place.

Mr Victor Li, who has worked side-by-side with Mr Li senior at the CK Group for 33 years, takes the helm as Chairman. His entire adult life has been devoted to the Group and he will continue to lead it towards the next new horizon of growth.

Like the great Cheung Kong river, this enterprise flows on to bring life and vitality to people around the globe. There is no ending to this story. Only a bright future. Onwards! ▣

 CK HUTCHISON HOLDINGS LIMITED

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**CK Hutchison**  
**In-house Editorial Team**  
Laura Cheung  
Jeremy Lau  
Hans Leung  
Erica Liu  
Wendy Luk  
Ada Chan  
Cheryl Chao

**Consulting Editor**  
Andrew Work

**Feedback and Enquiries**  
[SphereE@ckh.com.hk](mailto:SphereE@ckh.com.hk)



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## COVER STORY

# THE LONG RIVER FLOWS ON

**Li Ka-shing is the wellspring from which Cheung Kong Group arose. From a tiny plastics factory in Hong Kong to a global enterprise, the Group's dedicated staff and leadership under the new Chairman, Victor Li, will continue to create opportunity every day.**



1 0

**INFRASTRUCTURE FEATURE**

**Our Global Gas Future**

CK Infrastructure's gas companies are leading national integrated energy transformations that meet international obligations and may save the planet.

2 2

**PHILANTHROPY FOCUS**

**Onwards And Upwards! Shantou Forever**

Mr Li's commitment to advancing healthcare and education is made manifest through his Foundation. Shantou University is a special focus of that inspiration and action.



2 4

**PHILANTHROPY FOCUS**

**Donning New Armour: To Fight Ill Health!**

The Li Ka Shing Foundation leads the charge against fatal and chronic illness in Hong Kong, with Mr Li in the vanguard.



CORPORATE

## Show me Xiaomi

CK Hutchison and Xiaomi have formed a partnership that will give the smartphone, Internet of Things (IoT) and lifestyle giant access to A S Watson and 3 Group's 17,700 retail outlets and 270 million customers across Europe and Asia. High-quality, well-designed and accessibly priced technology will introduce customers to the 'Mi ecosystem' through Fortress, Watsons, Kruidvat, Superdrug and 3!



Mr Canning Fok, CK Hutchison Group Co-Managing Director (left) and Mr Wang Xiang, Xiaomi Senior Vice President celebrate the beginning of a global partnership.

**High-quality, well-designed and accessibly priced technology ... through Fortress, Watsons, Kruidvat, Superdrug and 3!**

### CKHH MAKES STRATEGIC INVESTMENT IN NURON

CKHH's strategic investment in nuron, the world's first continuous in-pipe waste water monitoring system, will facilitate its debut in Northumbrian Water's pipes. Advanced robotics empower proactive in-pipe monitoring to reduce costs and improve customer satisfaction.

### GET READY FOR THE REAL WORLD

CKHH Volunteers, trained by the Group's HR professionals, conducted mock job interviews with Hong Kong secondary students to prepare them for the real thing. The programme, co-organised with the Education Bureau, provides students with a broader perspective on different industries and opportunities available to them after schooling.



### CKHH 2017 ANNUAL REPORT A WINNER!

Every face tells a story! CK Hutchison has won a Silver award in the Cover Photo/Design (Diversified Business) category in the ARC International Awards XXXII which honour excellence in annual reports. Congratulations!



Mr Victor Li (fifth from left), Chairman and Group Co-Managing Director of CK Hutchison, and Mr Dominic Lai (fourth from left), ASW Group Managing Director, join the team to celebrate the opening of CKC18.

**Top of the class:  
Retail showroom of the future!**

**RETAIL**

## CKC18 combines our best in a high-concept store

CKC18 is haute couture for retail, an innovative retail concept experiment in the Cheung Kong Center in Hong Kong. This advanced retail showroom of the future features Scan & Go self-checkout and other revolutionary technologies. Shopping and technology combine with new takes on A S Watson's finest including "food le parc", a "WatsonsLab" health and beauty zone, an innovative "TechLife by FORTRESS" tech zone and a "Bar 0001 by Watson's Wine" wine zone. Cheers!



### RETAIL GRADUATION DAY

The ASW Retail Academy's first graduating class saw 120 staff successfully complete their Level 4 and 5 courses under Hong Kong's Qualifications Framework. Students and professors gathered at Hong Kong Polytechnic University to celebrate the launch of Hong Kong's first-ever retail academy.

### ASW PARTNERS WITH L'ORÉAL FOR COLORLAB

A S Watson Group (ASW) is all about fashion, and its new partnership with L'Oréal leads the way with Colorlab – the new, exciting, personalised make-up consultancy where artists help customers to show their true colours!





## TELECOMS

### A fair wind blows

CKHH increases its ownership of Wind Tre from 50% to 100% in a transaction valued at €2.45 billion. This member of the **3** family will contribute even more to the Group's earnings and cash flow.

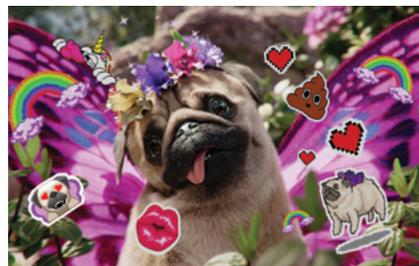


### OPEN SESAME ... TO CLOUD COMPUTING

**3** Hong Kong is partnering with telecoms titan Huawei to make Huawei's all-cloud core computing radio accessible through imminent 5G networks. It is also working with Internet giant Alibaba on cloud computing, intelligent big data, IoT and security to support Hong Kong's digital Internet economy. Bring on the future!

### SNAPPY PUGGERFLY CHARMS BRITAIN

Augmented reality (AR) comes to **3** UK users' Go Binge service in the shape of an "adorable, squishy-faced, purple-winged pug". Pufferfly needs your Snapchat-administered care to grow from a "ball-chasing, rainbow-pooing puppyfly right through to a fully fledged flying Pufferfly." Twelve million Snapchat users will also be able to use unlimited Snap without drawing down their monthly data allowance.



### 3 IRELAND SAYS THE SHOW WILL GO ON

**3** Ireland has committed to 10 years of continued sponsorship of 3Arena in Dublin, including a new 3Plus Lounge for VIP **3** customers. Over 900,000 annual visitors to the venue will benefit from new 'smart music' – a unique digital and connected music experience.



### SUPERDRUG SUPER PHONE WITH 3

**3** UK and Superdrug are partnering to offer a contract-free £10/month service that provides double loyalty points on all Superdrug purchases. Superdrug Mobile, rolled out across 827 stores in June, provides unlimited text and data.



### 3 OWNS THE PODIUM AT THE STEVIE AWARDS!

**3** Hong Kong was all over the winner's podium at the Stevie Awards (for product and service innovation), walking away with 10 trophies! Its "Fun Sharing Data Campaign" won gold, customer service shone with a silver medal, and eight bronzes rounded out the impressive winnings.



**E N E R G Y**

## Husky hits the mark

Husky Energy has drilled a successful exploration well in the South China Sea off China and made a discovery in the Atlantic region off Newfoundland and Labrador. The company has also signed two new Production Sharing Contracts with China National Offshore Oil Corporation for the Beibu Gulf project.

**O T H E R S**

### SHPL: INNOVATION LEADER IN CHINA

Shanghai Hutchison Pharmaceuticals Limited (SHPL) has been recognised by the Shanghai Municipal Science and Technology Commission, the Shanghai Municipal Finance Bureau, the State Taxation Bureau of Shanghai, and the Shanghai Municipal Administration of Taxation as a “High-tech Enterprise”, an accolade continuously won since 2005. In March 2018, SHPL won the “2017 Most Innovative Chinese Medicine Enterprises” award at the 2018 International Summit on Innovation in Traditional Chinese Medicine and Plant Medicine. Keep up the innovative work!



**In a Rush? A combined 40,000 barrels a day of oil from four projects in Canada.**

### NEW HOPE FOR COLORECTAL CANCER PATIENTS

Chi-Med’s fruquintinib capsules have been approved by the National Medical Products Administration of China for metastatic colorectal cancer patients. To be marketed in China under the brand name Elunate®, it plays a pivotal role in tumor-related angiogenesis, cutting off the blood supply that a tumor needs to grow rapidly, and bringing hope to patients for whom two or more prior treatments have failed.



### HUSKY ♥ YOUNG SCIENTISTS

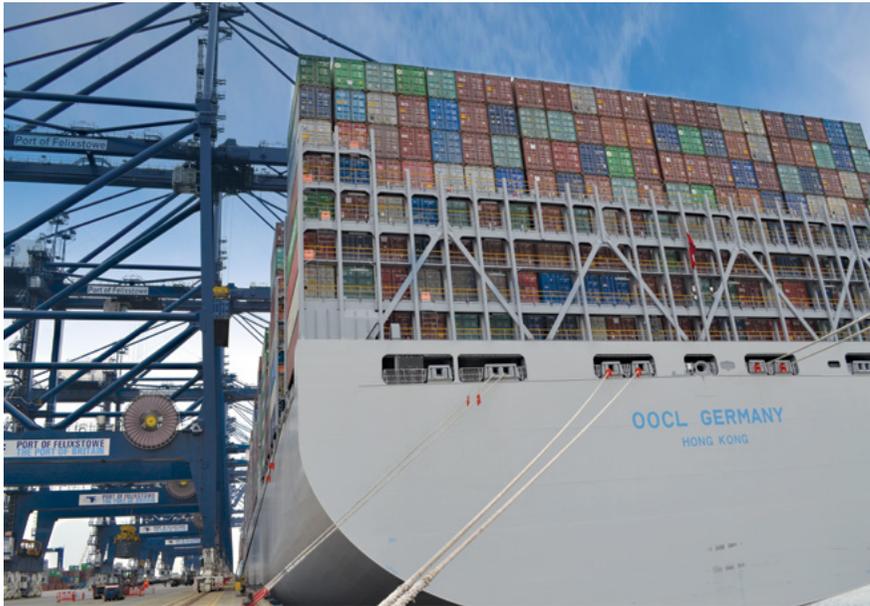
Husky sponsored – and also sent judges to – the massive Calgary Youth Science Fair. The celebration of innovation was so big that it needed to be held in the Olympic Oval to accommodate over 900 students showcasing more than 650 projects!



### MORE THERMALS IN SASKATCHEWAN

Husky Energy is developing four new projects in the Canadian prairie province of Saskatchewan. A combined 40,000 barrels of oil per day capacity will come online in 2018–20 from these projects, including the Rush Lake 2 Project.





## HUTCHISON PORTS THAILAND: MODERNISING WITH THE NATION

Hutchison Ports is leading the investment in modernising Laem Chabang port's Terminal D. Three remote-controlled quay cranes and eight remote-controlled rubber tyred gantry cranes are part of an ongoing upgrade programme.



## SILK ROAD: PORTS CONNECT BY RAIL ACROSS EURASIA

Forget the Orient Express – this is the Silk Road! Hutchison Ports Amsterdam is connecting to Yiwu (near Shanghai) via an 11,000 km rail route. Two trains a week will leave on a 16-day journey to connect the Dutch port and the Chinese city.



### PORTS

## Felixstowe: Big boats, big yards, big ambition

The Port of Felixstowe is getting bigger and the world is noticing. An extra 18,000 TEU of storage was welcomed by the British Secretary of State for Transport, the Rt Hon Chris Grayling, MP. This upgrade is attracting the mega-vessels, including the 21,000 TEU OOCL-owned ship *Germany*, the 100th mega-vessel to arrive this year.



### OUR NEWEST PORT: PAKISTAN

Hutchison Ports Pakistan opened this year to serve the city of Karachi and the surrounding region. The port is the only terminal with remote-controlled quay crane operations in the region. Welcome to the family!



### PORTS AND RAIL IN SYNERGY

SYNERGY is a new programme connecting the Hutchison Ports BEST in Barcelona to intermodal rail systems and railway terminals in Spain and Southern Europe.

**Ports - not just ships! Hutchison Ports Amsterdam is connecting to Yiwu (near Shanghai) via an 11,000 km rail route.**



**RETAIL**

## A big bear hug for Watsons – in Russia!

Watsons opens in its 12th national market with a store in St Petersburg. The health and beauty expert has plans to expand rapidly to make Russians “look good, feel great”.

**INFRASTRUCTURE**

### NORTHUMBRIAN WATER GROUP DOMINATES AWARDS

The Ben Hur of water companies continues its award-winning ways. Not only did it win “Utility of the Year” in December at the Utility Week Awards, it won the “UK Excellence Award” in March from the British Quality Foundation. And now, it has won “Water Company of the Year” at the Water Industry Achievement Awards in May.

### LOVE YOUR STAFF, THEY’LL LOVE YOU BACK

UK Power Networks is on the *Sunday Times* “Top 25 Best Big Companies to Work For” list, appearing in 11th place. As the only energy company in the top 25, that’s electrifying!



### NORTHERN GAS NETWORKS TOPS IN CUSTOMER SERVICES

An already incredibly high bar was moved further upwards as ServiceMark upped Northern Gas Networks’ (NGN’s) rating from 85.6% in January 2016 to 90.4% in a recent evaluation. The Institute of Customer Service awarded the ServiceMark accreditation in recognition of NGN’s “dedication and passion for great customer service shown by all members of staff”.

### UK POWER NETWORKS LAUNCHES ‘VIRTUAL POWER STATION’ IN LONDON

Solar panels and domestic storage batteries will now not only store electricity for consumers, but will discharge spare electricity into the network at peak times to smooth flow and demand. Every home can now be a mini – or ‘virtual’ – power station in its own right.



### ISTA A GREAT WAY TO SAVE THE PLANET!

ista International GmbH and BildungsCent e.V. collaborated to let students design their own climate boxes, which will be distributed to 100 schools in Germany. These boxes address climate change by enabling students to identify energy leaks, encourage climate-friendly behaviour and develop climate protection concepts and projects for their schools.



ENERGY

# OUR GLOBAL GAS FUTURE

Natural gas has been used by man for millennia. Humanity's use of it grew rapidly 200 years ago, but now CKI member companies are making it clean, green and ultra-efficient in the 21st century.



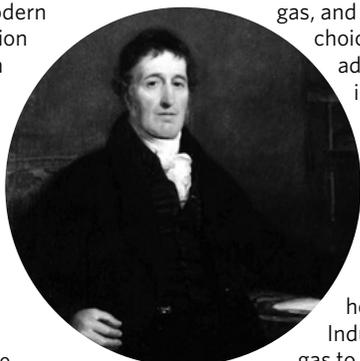
**Godly fire springs from Earth  
Lit by heaven's spark  
Heat, light and industry  
Freeing man from dark.**



Image courtesy of Leonard Bentley on Flickr

Let there be (gas) light! London is first illuminated by gas on Pall Mall in 1807.

**N**atural gas, unharnessed by man, was seen as evidence of the divine on Earth. Gas escaping from the ground was lit by errant lightning, creating mysterious fires that inspired holy places like the Oracle at Delphi in Ancient Greece. The 21st century version being pioneered by CK Infrastructure Holdings Limited (CKI) seems equally miraculous as it meets modern needs for a global population and a healthy planet. From the north and south of Britain to blazing hot Australia, CKI member companies are leading the way in transforming how gas is sourced, used and moved.



The ancient Chinese, in approximately 500 BC, were the first known people to channel and use gas, employing bamboo pipes to bring it to where they could heat seawater and isolate salt. In the last two centuries, gas has gone from lighting a single home to becoming a vital part of daily life, industrial advancement and economic vitality. Easy gas, found bubbling up out of rivers and escaping into the atmosphere, has largely been tapped, and scientists and engineers now extract it from coal, the bottom of the ocean and from its prison inside shale rock.

It was in the world-leading industrial Britain of the late 1700s and early 1800s when gas took off. Innovators were beginning to explore its uses and William Murdoch (inset) lit his house in Redruth, Cornwall, with gas lighting and the French engineer Philippe LeBon later patented a thermo-lamp in 1799. Frederick Albert Winsor (née

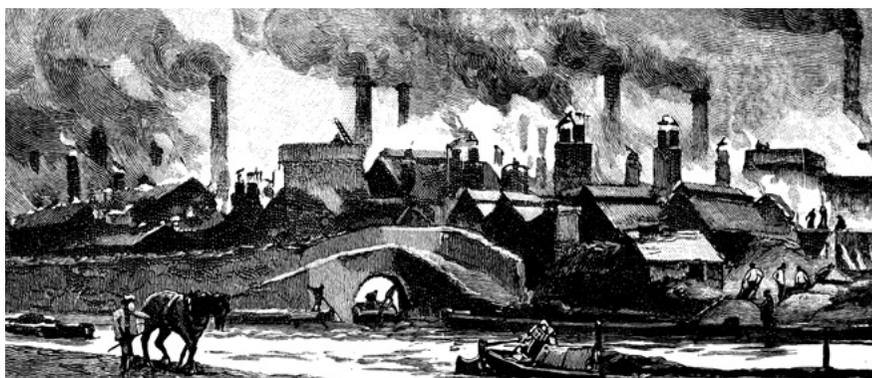
Friedrich Albrecht Winzer) from Germany, was intrigued and went to work. He lit up London's Pall Mall in 1807 and was granted a Royal Charter for the Gas Light and Coke Company in 1812 - the world's first public gas utility.

Gas use grew rapidly across the modern world. Britain was in particular blessed with abundant coal, a synthetic source of gas, and took to gas as a popular choice to light homes until the advent of electricity. Just in time, German scientist Robert Bunsen, of high school science Bunsen burner fame, perfected the right mix of gas and air in 1885 to make gas a viable option for a wider range of uses, including heating and cooking. Industrialists found uses for gas to drive manufacturing and processing plants.

But the use of gas has not come without a cost. The relatively inefficient burning of the original 19th and 20th century

gas systems resulted in severe local pollution, aggravated by coal burning for heat and the rise of the automobile. As governments around the world have struggled with bringing local pollution under control through a variety of measures, they have also taken on saving the planet. Carbon emission control demands that all contribute to reducing national carbon footprints, and public utilities - gas included - are doing their part. Delivering an affordable, efficient and reliable energy source, while minimising global impact, is the new imperative.

**Industrial-era pollution is a thing of the past. Modern standards ensure a much higher quality of air - and life.**



**COOL GAS-TANNIA**

Britain today is not the same as it was during the Industrial Revolution, when peppered moths rapidly evolved from being predominantly light coloured to predominantly dark coloured so as not to stand out as easy prey against pale trees blackened by pollution generated from burning coal. Horrific air pollution of that scale is now a thing of the past and modern industrial standards are much higher.

Today, gas is a big part of a cleaner Britain, having replaced dirty coal in many instances. Carbon emissions are a modern concern though. Over 80% of UK homes use gas for cooking and heating, and the latter generates 35% of UK carbon emissions.

Northern Gas Networks (NGN) and Wales & West Utilities are both doing their part to help reduce pollution from homes and help Britain achieve its global commitments to reduce its carbon footprint and hopefully slow the pace of climate change.

**GO NORTH**

NGN supplies 2,700,000 customers with gas over a 25,000 sq km range, including urban Leeds - Britain's third most-polluted city - to remote rural homes. 37,000 km of pipe ensures that the gas is where people need it, when they need it.

While the generation of gas does add to Britain's carbon footprint, it can be reduced. Furthermore, greater use of gas can replace dirty-burning diesel in



InTEGReL, the UK's first whole energy systems research and demonstration site, shows how hydrogen can be generated from an electrolyser and stored in the gas network.

vehicles to help reduce local air pollution. For example, NGN is currently working with Leeds City Council to deliver a compressed natural gas (CNG) filling station.

Supported by funding of £750,000 from the regulator Ofgem (the Office of Gas and Electricity Markets), NGN is building a high-pressure gas connection which will supply CNG to the filling station, and fuel the city's fleet of converted CNG bin lorries. Longer term, it's hoped the station will supply any back-to-depot vehicle in the city.

The rubbish may still be stinky, but the engine emissions from the bin lorries will be much cleaner, reducing roadside air pollution. Success will see infrastructure put in place for private vehicles so that owners can also switch to cleaner CNG vehicles.

Ofgem is also funding NGN's Low Carbon Gas Pre-heating project, and £4 million has been dedicated to finding more efficient ways to heat gas before it is transported through the network of pipes.

This illustrates an important point - distribution matters. Gains in efficiency by improving transport and reducing leakage can have an impact on our carbon footprint. NGN will reduce pipe leakage by 18% over the next eight years as part of a £1 billion regional pipe upgrade. But the most radical plan in the works may take traditional methane gas out of the pipes completely and replace it with a new source.

**HYDROGEN IN THE HOLE!**

Hydrogen has, for some time, been touted as the next big thing. Indeed, it has ascended Gartners' Hype Cycle for Emerging Technologies, peaked with promise and then descended into the 'Trough of Disillusionment' when hydrogen batteries for vehicles proved heavy and expensive. But in the latter parts of the Cycle comes the 'Slope of Enlightenment', when

the technology is better understood and starts to deliver. And this is where we are now for fuel cells in cars - and hydrogen in gas distribution.

Hydrogen does not occur naturally in nature and requires energy to be processed, usually from natural gas. But in its pure form, it has a lower energy content and higher burning velocity than gas; bigger burn, less heat. Current home appliances are made for gas with a low hydrogen content.

However, NGN is exploring, through its HyDeploy (i.e. hydrogen deployment) research project, whether up to 20% hydrogen can be blended into the normal gas supply to reduce carbon emissions. This joint research project with Cadent and Keele University suggests that, if deployed UK-wide, a hydrogen blend could save around six million tonnes of carbon emissions every year - the equivalent of removing 2.5 million cars from UK roads.

Experimentation and success, leading to national deployment, could see the carbon footprint of Britain's heating alone drop by 30%, making a major contribution to the UK's obligations under the Paris Agreement, a global climate agreement designed to take steps to reduce greenhouse gas emissions.

The HyDeploy programme is only one of many research initiatives underway. For example, the InTEGReL project is a multi-vector collaboration examining how the gas, electricity and oil sectors could work together to efficiently transport and store energy across media. This Gateshead-based project is being undertaken with Newcastle University and Northern Powergrid, exploring battery storage and power-to-gas solutions that could bring benefits to customers - and help Britain



achieve its Ofgem-directed emission reduction targets.

However, the most ambitious target of all may be to replace all - 100% - of Britain's methane gas supply with hydrogen. The H21 project aims to deliver the knowledge needed to convert gas heating in the UK to 100% hydrogen.

Of the Ofgem Network Innovation Competition (NIC) funds, £9 million are supporting NGN's investigation into this important question, with another £1.3 million contributed by the UK gas networks.

The challenges are not inconsiderable. Apart from cost and environmental factors, safety has to be NGN's number one concern.

The H21 NIC project will supply all the quantified safety-based evidence required for delivery of a 100% hydrogen gas network. Its delivery is being timed to coincide with the UK government's own £25 million Hy4Heat programme, which is exploring hydrogen's use downstream of

the meter - in heating for buildings. Both programmes are expected to supply all the critical evidence required to progress towards a government policy decision on hydrogen in 2021.

### H21: A PARADIGM SHIFT

Readers interested in learning more about the legal, technical and policy challenges in going 100% hydrogen can read the H21 report here:



Integrative thinking underlies much of the momentum behind the future of gas distribution networks. The H21 project is a collaborative one, involving another CKI firm, Wales & West Utilities, which exemplifies this kind of holistic thinking as it looks to the future.

### COLLABORATION NATION

Hydrogen isn't the only part of the story.

Wales & West Utilities has a slew of projects it is undertaking with academic partners like Imperial College London and City, University of London, as well as multiple energy partners.

One of its projects, the Freedom project, is investigating innovative in-home technologies that make use of a multi-supply heating system. Domestic smart-controlled hybrid heating systems could make use of a gas boiler and an air source heat pump in tandem. When peak demand is being experienced by the electricity network, the in-home system could switch to gas heating. Energy efficiency realised from using

# Flaring and fugitives: Husky Energy efficiency

Like its British and Australian counterparts in the Group, Husky Energy Inc is a major player which is expected to contribute to national efforts to meet Paris Agreement targets on climate change. The production of oil and gas necessarily involves the generation and release of various greenhouse gases (GHG) and air pollution. However, Husky is deploying new technology to reduce its energy intensity in production.

For example, Husky is undertaking new means to reduce both gas flaring and gas venting in its operations. Starting in 2014, Husky has installed over 100 compressors across the provinces of Alberta and Saskatchewan. Rather than continuously burning-off gas by-products of oil extraction or releasing it into the atmosphere, the gas can be captured and

used for energy generation on-site or sold as fuel. Compressors on additional sites are planned for this year.

### FINDING FUGITIVES

Leakage is also an issue in the industry and Husky is vigilant in tracking down fugitive emissions. The spectacularly named Fugitive Emission Management Program hunts down errant equipment that is letting GHGs and volatile organic compounds into the atmosphere. Infrared cameras, vapour analysers and ultrasound are among the tools gas detectives use to track down fugitives. All these efforts are monitored and reported as part of the Greenhouse Gas Management Framework in dialogue with national and provincial governments in a collaborative effort to contribute to Canada's Paris Agreement commitments.

Vapour analysers and infrared cameras - just a few of the tools used for the downstream Fugitive Emission Management Program.





Wales & West Utilities' cylindrical steel vessels store high-pressure methane gas, contributing daily energy storage to meet heat, power and transport demands.

hybrid systems also reduces energy loss in the electricity network and reduces peaking of the burning of coal and gas in power plants. Imperial College modelling shows savings of £1.3 billion a year against an annual investment of £178 million. The Freedom project not only draws on H21 and HyDeploy findings, but also recognises more decarbonisation will come through the use of biomethane and BioSNG, a synthetic natural gas produced from organic matter (waste).

The Pathfinder energy modelling project is even bigger, looking across the entire energy network. Building heating, transport, lighting and the entire spectrum of energy production, distribution and needs were considered for the county of Cornwall. The model allows everyone involved, from city planners to energy providers and consumers, to plug in the numbers to determine a low-carbon, economic mix of energy generation, storage and distribution across an economy with mixed energy use in homes, vehicles, industry and more. Planners in Swansea, Wales, used it to investigate the role that tidal lagoons could play in their unique energy mix. The approach has won its designers awards (from the Institution of Gas Engineers and Managers (IGEM)) for its forward thinking approach and logic, and in recognition of its utility for planners across Europe and the world.

Other projects are in the works. Wales & West Utilities' Pathfinder model caught

the eye of their UK Power Networks colleagues and they are now in discussions about collaborating under a task force structure on a broader 'green city' vision. The gas networks are becoming a vital part of Britain's overall, integrated energy strategy to supply the people and economy while also meeting obligations under the Paris Agreement and Kyoto Protocol.

#### MEANWHILE, DOWN UNDER ...

Australia may be on the opposite side of the Earth, but of course it didn't miss out on the gas-driven revolution that saw consumers and industry alike adopt this game-changing energy source. It did come late to the game though. Australia's first major use of gas was in the Roma, Queensland power station, generating electricity. The first Australian city to get 'gassed up' was Brisbane in 1969, with Adelaide following later that year. Sydney, Australia's largest city, only laid down its infrastructure in 1976. But Australia has made up for lost time and now not only has a massive national infrastructure, but is the world's second biggest exporter of liquefied natural gas (LNG). Gas provides 44% of household energy in the country.

One of the biggest players is CKI member company, Australian Gas Infrastructure Group (AGIG). AGIG serves over two million consumers and comprises three networks with 34,000 km of natural gas distribution and 3,500 km of natural gas transmission pipelines. Like its

British counterparts, it is taking a broad perspective on supporting an integrated, national energy plan that helps Australia meet international commitments. Along with other national energy partners, it has set its sights on a bold national goal: zero carbon gas by 2050.

Like NGN and Wales & West Utilities, hydrogen is part of the story. With support from the South Australian government and key industry partners, AGIG is delivering HyP SA (Hydrogen Park South Australia) in Adelaide, where renewable electricity sourced from the South Australian grid will be used to produce hydrogen via electrolysis. Blended gas will then be injected into the gas distribution network.

AGIG is working with other CKI companies to leverage their experience. For example, Wales & West Utilities will deploy 10% hydrogen to start with and will no doubt expand that as it learns more from its own experience and that of the NGN H21 venture. Indeed, AGIG's first Hydrogen Seminar featured speakers from NGN who shared their experience.

In Australia, other technologies such as biogas and coal gasification, along with carbon capture and storage, could also play a part in decarbonising gas consumption.

This entire goal is encapsulated in *Gas Vision 2050*, the report from Energy Networks Australia, the electricity and

gas grid joint industry association. AGIG played a leading role in developing the vision as well as sponsoring the Future Fuels Cooperative Research Centre. It has its eye firmly on the future and is working with national partners for Australia's energy future – and a better world.

### GAS FOR THE FUTURE

In the old days ... people were pretty happy to give up burning unreliable and smelly whale oil, candles and coal following the advent of gas. As long as explosions, fires and suffocations were kept down to a dull roar, Victorians recognised it as the major advance for safety, convenience and health that it was. Safety is now paramount, but gas distribution companies across CKI are showing vision and leadership in research that will transform not just the gas business, but the entire energy grids and even the planet's future. By collaborating and sharing with CKI counterparts, academics and governments, Wales & West Utilities, NGN and AGIG are leading their nations out of the dark and into a bright, clean, gas-friendly future. □



Australian Gas Networks is conducting research and running tests to bring hydrogen into their gas network, helping to decarbonise Australia's gas supply.

## HK Electric is going gas

HK Electric has been burning coal to supply energy to Hong Kong Island and Lamma Island since 1890. Hong Kong Island had gas street lamps for some time, but these were largely replaced by electric street lights by the late 1930s. The Lamma Power Station currently keeps the lights on for approximately 1.5 million residents as well as a massive commercial district dominated by electricity-dependent skyscrapers.

HK Electric uses some of the cleanest burning coal in the world and deploys the most rigorous emission-reducing scrubbers and systems available, but with coal-fired turbines approaching the end of

their asset life cycle, investing in further emission improvement for the existing coal plants will not be cost-effective. The future is natural gas.

Two new gas-fired generating units have been commissioned in recent years. Three more new units will come online in 2020 and 2022, and will replace five coal-fired units and an old converted gas-fired unit.

HK Electric's shift to gas is a key part of the Hong Kong government's commitment to reducing carbon emissions by 65% to 70% by 2030 (using 2005 as the baseline). The phasing out of coal and the adoption of gas will see new units produce approximately

50% fewer carbon emissions per unit of electricity produced. They are also being equipped with advanced cycle gas turbine technology to reduce nitrogen oxide emissions. Newer gas turbines are also more efficient and cost-effective than their older counterparts.

Other than gas, HK Electric also supports the wider use of renewable energy. The Company has installed the city's largest solar power system and operates Hong Kong's only wind power station, Lamma Winds. Going gas and renewable energy is the clean way forward for Hong Kong – and the planet.

# THE LONG RIVER

## FLOWS ON

From small beginnings a turbulent stream can flow, build, and grow to become a mighty river.

Against the backdrop of WWII, a precocious scholar is forced from school at the tender age of 10. From a hillside village in China to a Hong Kong factory and poverty, he cannot be suppressed. From apprentice to salesman to manager to general manager in short order, he becomes an entrepreneur and the master of his destiny at 21 years old: Cheung Kong Plastics is born.

Like a river, the business flows, creates new streams and accepts tributaries as it grows and moves forward. From plastics to real estate, to global ports, retail, infrastructure, energy, telecommunications and so, so much more, the Cheung Kong Group flows on.

This river connects the world and has no end. Cheung Kong - the Yangtze River - at the heart of China still embodies harmony and good fortune. From a vital spring, this river flows on.

**“Cheung Kong** - the great river Yangtze that aggregates countless streams and tributaries.”

**Li Ka-shing**

“

Maintain stability while  
advancing, and **advance**  
while maintaining **stability**.

>>

**Establish** oneself and  
pursue **selflessness**.

In changing times,  
the **Foundation** is  
my **unchanging promise**.

**Knowledge** reshapes **destiny**.

In this **exponential era**, the wilful blind  
turn 'possibles into impossibles'  
and can't see **the wood for the trees**.

A **good reputation** is  
the **invaluable asset**  
that is never expressed on the balance sheet.

I often refer to my Foundation as  
my **'third son'** - my own **commitment**  
to **making a difference**.

The idea of **purpose** - that what we do matters  
to people other than ourselves -  
**differentiates us** between being a  
**problem solver** or **the problem**.

Investing in **education reforms**  
secures a **sustainable**  
quality of life **for all**.

**Technological innovation** underpins  
the ability to create **collective wealth**  
and **individual success**.

”



# CHEUNG KONG GROUP

In 1972, Cheung Kong (Holdings) Limited was listed on the Hong Kong Stock Exchange at **HK\$3** per share and was **65 times** oversubscribed.

At the time of the IPO, the Company's market capitalisation was **HK\$126 million** and a net profit of **HK\$12.5 million** was forecast for the first year of operations. The Company actually delivered a profit of **HK\$43.7 million**.

The Company owned **408,000 sq ft** of mainly industrial rental properties and had another **1.54 million sq ft** in development.

At the time, there were approximately **8,000 employees**.  
**And so the story begins ...**

**Today**, the Group operates in **50+ countries**  
around the world, with **320,000 employees**,  
and its public companies have an aggregate  
market cap of over **HK\$1.2 trillion**.

## CK GROUP FLAGSHIP COMPANIES HAVE **NEVER** REPORTED A LOSS

If you had invested in Cheung Kong Holdings at IPO and reinvested your dividends, you would hold shares in CK Hutchison Holdings and CK Asset Holdings today worth **5,000x** your initial investment!

**INVESTMENT PROPERTIES**

Rental property portfolio of 43m sq ft including office, retail, industrial and hotel properties across Hong Kong, Mainland China, and overseas.

**DEVELOPMENT PROPERTIES**

Land bank portfolio of approximately 116m sq ft across Hong Kong, Mainland China, and overseas.

**HOTELS**

Owning and operating 17 hotels and serviced suites in Hong Kong, 5 hotels in Mainland China, and 1 hotel in The Bahamas, providing over 18,000 rooms.

**INFRASTRUCTURE**

- 32 countries
- 26,000 km of water mains
- 30,000 km of sewers
- 11,000 MW electricity generation capacity
- 505,000 km of power networks
- 109,000 km of gas networks

**ENERGY**

- 4 countries
- 297,900 barrels of oil produced a day
- Liwan natural gas fields in the South China Sea have produced gross sales volumes of more than 11.9 billion cubic metres since their first gas in 2014

**TELECOMMUNICATIONS**

- 11 countries
- Serving 128.3m customers
- 4 in-market mobile consolidation deals since 2013
- Solid portfolio of 5G spectrum

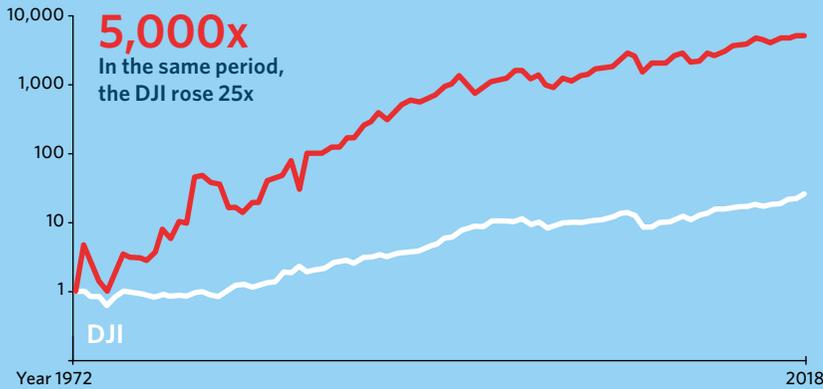
**PORTS**

- 26 countries
- 52 ports
- 290 berths
- 84.7m twenty-foot equivalent units containers handled\*

**RETAIL**

- 24 markets
- 14,400 stores
- 11,300m products sold\*
- 4,377m customers served\*

\*2017 figures



The red graph line shows the dollar equivalent of a CKH share held from initial listing date till now with dividends reinvested on the distribution date and including the value of the shares of CK Asset Holdings Limited received post 2015 corporate reorganisation.

To get a more meaningful comparison between the two, we use a logarithmic scale, in which the vertical axis represents powers of 10.

Source: Bloomberg, Reuters and others

# THE PASSING OF THE TORCH

Something happened this year for the first time in the 68-year history of the CK Group: a Chairman stepped down.



Mr Li Ka-shing, founder of Cheung Kong Plastics in 1950, the source of the Cheung Kong - Cantonese for Yangtze - 'river' that has flowed into the lives of millions of staff and customers around the globe, retired.

However, something else happened for the first time: a new Chairman stepped up. Mr Victor Li has been steeped in the Group since his beginning. Apart from a few years receiving a top-notch education in the US, he has grown up hearing about, then working in, the CK Group. He has had unparalleled access to the ultimate mentor and has been the right hand of Mr Li senior for decades. As he steps up, he is not alone, but leads a Board of extraordinary executives. The CK Group continues to benefit from one of the deepest, world-class executive talent pools ever assembled, which will ensure the continuity of the Group.

The new Chairman takes up his role with deep respect for the past. "On behalf of the Board, I would like to extend our sincere gratitude to Mr Li for his invaluable contributions at practically no cost to the Group, and deep appreciation that Mr Li has agreed to stay on as Senior Advisor to continue to contribute to the Group." □



1 Chairman, meet the Chairman! The flame continues to shine brightly as Mr Li passes the torch to his son, Victor Li.  
2-5 At the 2018 Annual General Meeting (AGM), Mr Li is overwhelmed with joy at the outburst of exuberant appreciation from the assembled shareholders after he thanks them for their stalwart support.



6 Supporters and shareholders gather for an AGM unlike any the Group has seen before.

7 Mr Li enjoys answering journalists' questions as much as they love asking them.

8 The world-class executives that make up the Board are an international cohort that will continue to guide and serve the Group.



Actionable change inspired by an unchanging promise propels Mr Li forward.

## UNCHANGING PROMISE

## ONWARDS AND UPWARDS!

# SHANTOU FOREVER

Education is as much a matter of character and commitment as facts and figures. For Li Ka-shing, that commitment has meant almost four decades of building an institution that will nurture youth for years to come.

### NEVER FORGET WHERE YOU ARE FROM.

Mr Li Ka-shing clearly remembers. As a boy, he left his native Chao'an County (now part of the Chaoshan region, including Chaozhou and Shantou) at a time of war. Made a young man too early, he suffered from tuberculosis and saw the same disease take his father. When others were burning

old textbooks for fuel, he saved them from the fire to feed his hunger for knowledge, educating himself at a time when formal education was an impossibility.

From the earliest days of his success, he started giving back. The breadth and depth of his philanthropy are wide and deep, but education and medicine have always claimed a special place in his heart – as has his native Chaoshan.

As soon as he had risen beyond the one-room plastics factory at the founding of Cheung Kong Plastics, he started to give back. As early as 1981, Mr Li pledged a donation of HK\$300 million to establish Shantou University on a piece of deserted land. Total donations have exceeded HK\$10 billion to date. In addition, the Foundation is a long-time supporter of advanced medical education and research at a number of top institutions such as the University of Oxford, Stanford University and the University of Michigan, while strengthening their collaboration with the Shantou University Medical College. More recently, Mr Li also supported the creation of the Guangdong Technion - Israel Institute of Technology, a joint venture between Technion and Shantou University.

Mr Li delivered this year's graduation speech on 29 June, his last as the Honorary Chairman of Shantou University. He has not missed this event since 2001.

While the funding is of vital importance, Mr Li's vision and commitment, made real by labour, are crucial. The vital element of active engagement presents an example that has not been lost on the next generation. Mr Richard Li, a university Council member and Mr Li's son, stressed that what he was "most impressed by is how he [his father] devoted so much time and effort into helping society - even more than just donating the money".

Both father and son are firm in their commitment to supporting education at Shantou University across China and around the world. Mr Li senior called it a blessing and an honour to support education in his home country.

The Foundation's work will continue, with its current practice providing guidance for the future. An annual disbursement of 35% of cash income has been standard operating procedure, rising to 50% in tough years where either a natural disaster strikes or needs spike for other reasons. The Foundation has made grants of over HK\$20 billion to date.

**CHARACTER, CULTIVATED, TRANSCENDS ADVERSITY**

Mr Li's speech to the graduating class of Shantou University stressed character over achievement. He urged students to "fight through the labyrinth of destiny" by displaying humility and by listening to their conscience to "build hope and shape a new world".



Like father, like son: Richard Li and LKSF colleagues keep the flame alive.

**"Vision and commitment, made real by labour, are crucial."**

While not made explicit, his own story lends strength to his words and this fact is not lost on the students. Many attend on full and partial scholarships and bursaries, making education a means to elevate the fortunes of themselves and their families from humble beginnings.

This appreciation is made palpable when he arrives on campus. While he has brought Nobel Prize winners and national sports champions to campus for previous graduation ceremonies, he is still the star of their hearts. A rock star in fact.

A leading Hong Kong newspaper said Mr Li was received "to a deafening welcome and a sea of phones ..." with many students taking photographs.

During his commencement speech, Mr Li stressed some of the ideas that he has consistently adhered to in his life, and shared his wisdom with the students, specifically that the cultivation of character is needed to rise above the challenges of adversity, modern and timeless, to play a beneficial and transformative role in the world. Humility and conscience play a special role.

He stressed that humility "safeguards you from the faults of a culture of entitlement steeped in pretentiousness, arrogance and hubris. People with intellectual humility, who are humble by nature, tend to be more open-minded and potent problem-solvers, since they recognise that their own opinions might not be the only valid option."

The glibly gifted have a special danger to avoid, lest their easily obtained skills lend to a lack of care for others. He cautions that, "... moral conscience matters as much as having talents. At its core, the idea of purpose is the idea that what we do matters to people other than ourselves. It will differentiate you between being a problem-solver or the problem, an inspiring human or a one-dimensional whiplashing bully."

**ONWARDS AND UPWARDS!**

LKSF has contributed mightily to the building of a new world. For Shantou University, according to Mr Li, "my son Richard and my [Foundation] colleagues will continue my mission and work" ... with, of course, dedication and support from the university staff, students, and the thousands of graduates. As long as they all heed Mr Li's words to "stay logical, stay ethical, stay honest," they will work "together to build a dream".

And never forget where they came from. □





Mr Li Ka-shing (second from right) initiates the "Love Can Help" programme to offer financial assistance to Hong Kong patients through the HA and two local universities. From right, Professor Xiang Zhang, President and Vice-Chancellor of HKU; HA Chairman Professor John Leong; Professor Rocky Tuan, Vice-Chancellor and President of CUHK; Professor Fok Tai-fai, Pro-Vice-Chancellor and Vice-President of CUHK; Professor Gabriel Leung, Dean of the Li Ka Shing Faculty of Medicine of HKU, and Dr Leung Pak-yin, Chief Executive of the HA.

## HEALTHCARE

## DONNING NEW ARMOUR: TO FIGHT ILL HEALTH!

As Mr Li Ka-shing plans to be "suited up in a new coat of armour, working to effect positive change through [his] Foundation's philanthropic work in health, education and the relief of suffering", love will be his sword. And the first challenge he will tackle is that of ill health in Hong Kong.

**W**hile the poorest of the poor in Hong Kong qualify for government subsidy for medical procedures, some exist on the border of eligibility where accessing the best medical care poses significant financial and emotional hardship. Through a new programme, "Love Can Help", the Li Ka Shing Foundation (LKSF) will provide HK\$100 million, to, as Mr Li puts it, help "a friend in need".

The Foundation's – and Mr Li's – commitment has been manifest for decades. In his early life, education and healthcare were not forthcoming. His commitment,

after leaving the role of Chairman of the CK Group, has not wavered, but is driving his increased involvement in contributing to education and healthcare initiatives. The "Love Can Help" programme is just the first in his 'post-Chair' phase of life.

The funds will provide cash subsidies for those in need, much of it through Hong Kong's main healthcare provider, the Hospital Authority (HA), as well as through the city's two medical schools.

### CONQUERING CANCER AND BEYOND

Under the "Love Can Help" programme, the HA will receive HK\$10 million designed

to help 2,000 people at risk of cancer to receive PET-CT scans. A contribution of HK\$20 million to subsidise PCI Stents will enable 4,000 patients to benefit each year. After mid-2020, some will receive these scans at a new PET-CT centre funded with a HK\$35 million grant, and catering for over 1,900 people a year once completed. Beyond detection, the teaching hospitals of the two local universities will use grants to help patients gain access to novel drugs or medical devices.

The Chinese University of Hong Kong (CUHK) will also receive HK\$17.5 million to help patients suffering from autoimmune diseases such as Crohn's disease, acute severe ulcerative colitis or disabling autoimmune encephalitis.

The University of Hong Kong (HKU) will receive the same amount to help patients with cancer as well as patients with other chronic and autoimmune diseases that do not respond to traditional treatments.

### ARMED WITH LOVE

LKSF will benefit from the additional time and effort Mr Li will bring to its mission to "inspire societal improvement through supporting education and healthcare initiatives". Fully focused, fully armoured and armed with love, Mr Li and the Foundation carry on! □



**Cheung Kong –**  
the great river **Yangtze** that aggregates  
**countless streams**  
and **tributaries.**