

**URBAN PLANNING AND ENVIRONMENTAL LAW QUARTERLY**

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The other joint winner (see UPELQ June edition) of the Fred Kan & Co. Prize (2016) for best dissertation in the Master of Science Course (Environmental Management) course at the University of Hong Kong presented a dissertation focusing on the role of “green space” in the “city-brand” projected by Hong Kong. Aspects of this dissertation are summarised in this edition.

*The Editors*

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**GREEN SPACES AND HONG KONG'S BRAND**

*Objectives*

The abstract in Fok Wai Kit's dissertation *Multi-stakeholder study on urban greening as Hong Kong's city branding practice* describes the research project as follows:

*“This study explores Hong Kong's potential to enhance its international position and social development through mainstreaming urban greening in its city branding exercise from the perspectives of local residents, overseas investors/workers and tourists. The variety of services by urban greeneries are theorised to be compatible with the economic and social purposes of city branding, as exemplified by Minneapolis, Vancouver, Singapore and London. Through literature review, despite enjoying exceptional green cityscape with the presence of urban parks, country parks, Hong Kong Wetland Park and other green facilities, the authority is considered unable to capitalise the strength under Hong Kong's current branding exercise. The results from the questionnaire survey (n = 240), focus groups (n = 10) and email interviews reveal that, while perceiving the current availability of urban green resources inadequate, people generally favour incorporating more green elements into the brand, mostly due to the positive correlation between urban green provision and quality of living. The mediocre ratings towards the current brand highlight a need to review the brand. The adoption of the proposal also necessitates the authority to enhance its work in the creation and management of urban green resources as well as environmental education.”*

The term “city branding” is defined as *“The ability to differentiate oneself from the rest can allow cities to enjoy advantages, often economic ones”*.

The brand highlights our economic achievements, quality of life and the general *“dynamism of the city”*. The author examined *“the perception from the stakeholders of Hong Kong's incorporating more urban green elements into its city branding practice”*.

The study considered Hong Kong as a whole, single territory. That is, individual “greeneries” (i.e. green areas/spaces) are not delineated *“as such an approach would confine the investigation to particular areas in Hong Kong”*. Thus, the term “urban greening” refers to *“the initiatives taken by the government to primarily conserve, maintain and increase the greeneries within the city's territory, namely urban parks, country parks, green belt, Greening Master Plan, Hong Kong Wetland Park, Community Garden Programme and skyrise greening”*.

The author says the study and dissertation emphasise *“the questions of why and how urban greeneries should be branded for a city's reputation with a dedicatedly-constructed theoretical framework and empirical evidence, instead of focusing on which green resources should be branded. This perception study therefore prioritises the agenda to mainstream urban greeneries in Hong Kong's city branding exercise and provides useful data and insights for future discussions on the topic”*. [We are not sure what a “dedicatedly-constructed theoretical framework” is.]

Thus, the early pages of the dissertation suggest it is more about branding issues than environmental ones – and so it turns out to be.

### City branding

The author says “city branding” is aimed at giving a city an edge in the “*fierce competition for scarce resources*” such as talented workers and capital investment. Branding has become more important with the evolution of globalisation. City branding “*is a deliberate process to attract economic resources (from) outside the city and strengthen the community within it*”.

### Urban greening

Urban greening “*refers to the creation and maintenance of open spaces covered with vegetation the yield beneficial services to urban dwellers to promote urban well-being*”. Once perceived as a luxury, “*green areas are now incorporated into urban infrastructure to perform services*”. Urban greening, or “green infrastructure” consists of a “*strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem service*” (as defined by the European Commission, 2013).

Environmental benefits of having green spaces include: alleviating the heat island effect; providing oxygen through photosynthesis, requesting carbon dioxide (thereby helping to combat the greenhouse gas effect; cushioning noise; combating some pollutants; and providing habitat for wildlife).

There are also economic benefits derived from greening a city, such as making the city more attractive for tourists and investors.

Urban greening also provide social and cultural benefits, Parks encourage exercising and social contacts. Fung shui woods are traditional green areas with cultural significance.

### Comparative examples of city-branding

Four cities were selected as examples of using urban greening “to brand cities”: Minneapolis, U.S.A; Vancouver, Canada; Singapore and London, U.K.

The different approaches of these cities to the incorporation of green elements in their city-brands are summarised. Vancouver, for example, has registered as a trade mark its city-brand: *Vancouver – Spectacular by Nature*, which includes a logo modelled on the up-stretched arms of an athlete celebrating victory. Singapore’s National Parks Department’s logo is: *Let’s Make Singapore Our Garden*. London’s brand is: *Greater London National Park City*.

There is no measure of the advantage these cities have obtained – if any – by adopting green-themed brands (or, in Singapore’s case, a brand for one of its administrative departments). Indeed, it would be difficult to assess and measure such advantage.

In relation to London, the author observes: “*this initiative to turn London into the Greater London National Park City demonstrates that when the local political context allows civic engagement and idea exchange for policy innovation, city branding can be a bottom-up exercise. In this regard, city branding enables citizen empowerment to create a place they aspire to live in*”.

### City branding in Hong Kong

Our city-brand for the period 2001-2010 featured the bold statement: *Asia’s world city – Hong Kong*, above a colourful dragon’s head. The brand underwent revision following public consultation in 2008-2009. The reintroduced brand (March 2010) and Hong Kong’s promotional campaigns continue “*to market Hong Kong to international audiences as “a free and dynamic society where creativity and entrepreneurship converge”, “a cosmopolitan city offering global connectivity, security and rich diversity” and “home to a unique network of people who celebrate excellence and quality living*”.

The author comments: “*the latest advertising campaign launched in June 2015 – Our Hong Kong – focuses on the financial services, innovation and technology, arts and culture as well as green living in Hong Kong*”.

### Urban greening in Hong Kong

As the study treats the entire territory of Hong Kong as the “city”, our green credentials do not look too bad. An estimated 67% (i.e. 74,100 hectares) of the city “is covered by natural vegetation”, thanks mainly to the country parks system established by the colonial government in 1976 under the *Country Park Ordinance* (Cap.208). Other green spaces include: green belt and conservation zones; community gardens in the community garden programme; a few urban parks; and Hong Kong’s Wetland Park.

A study cited by the author (Aldous, 2010) estimated that in 1997 39% of “the total city area” comprised “green space”. However, if you excluded country parts, that reduced dramatically to 1.5%, which translated to 2.5m<sup>2</sup> per person. The Planning Department (in 2005) aimed to provide a minimum of 20 hectares of green space per 100,000 people, i.e. 2 m<sup>2</sup> per capita.

The author notes that (unfortunately) “urban green is marginally adopted in Hong Kong’s city branding exercise”. He goes on to comment: “*Urban green facilities are also not considered as the mainstream-recommended tourism attractions in Hong Kong. On the Hong Kong Tourism Board’s website, none of the greening-related attractions is listed as top attractions under “Best of Hong Kong” and “Highlight Attraction” page. Rather, the attractions are categorised thematically under “Great Outdoors” and “Insider’s Guide – Natural Heritage” (by the Hong Kong Tourism Board). The image of Asia’s world city is constructed via the city’s gastronomic diversity, shopping experience, entertainment facilities and events as well as history and culture. Urban green can thus be perceived as a minority in Hong Kong’s city branding practice, despite its high potential to be developed as a branding strategy which may exclusively belong to Hong Kong*”.

### Constraints on urban greening in Hong Kong

There are significant obstacles in the way of both Hong Kong’s becoming greener and to its featuring its green attributes in its city brand. These are:

(a) *Social constraints*

There is no real culture of valuing and protecting the environment. It is aptly stated: “*Hong Kong people treat environmental issues from “a largely anthropocentric and utilitarian perspectives”.* In other words, they are concerned about the environment because the surroundings impact them personally. Being financially viable is of the most concern in the working class so they prioritise economic activities over urban greening”.

(b) *Institutional constraints*

The government has been the main driver of such greening as Hong Kong has implemented. However, responsibility for green spaces is spread across ten departments which operate independently and communications between them is poor.

(c) *Developmental constraints*

Green spaces are constantly under threat from developers and the ubiquitous small house policy. Indigenous villagers may apply to the Town Planning Board to erect “small houses” in designated green zones, such as greenbelts. As the author notes: *“These urban greeneries are constantly on the brink to be encroached by potential development projects. Therefore, the integrity of Hong Kong’s brand as a city of greeneries may be eroded by the development pressure”*.

*Public survey*

A significant part of the methodology for preparing the dissertation comprised sampling public opinion by way of an on-line questionnaire survey, email interviews and discussions with a “focus group” of ten people. Two hundred and forty responses to the survey were received.

Questions put to participants centred on the quantity and quality of urban green spaces, their opinions as to the role of “urban green” in framing Hong Kong’s image, and whether or not “urban green spaces” should be incorporated into Hong Kong’s city brand.

Respondents *“reacted rather positively on urban green’s capability of improving their quality of life in the neighborhood”*.

The author’s conclusion was that *“as a whole, the population agrees that enhancing the city’s branding by urban green will faster Hong Kong’s competitiveness in the world”*.

*Marketing a green Hong Kong*

The results of the public consultation phase of his research led the author to opine: *“urban green’s environmental, economic, social and cultural services are posited to be not only relatable but compatible with the functions of city branding. This framework is essential to elaborate on the potential benefits Hong Kong will enjoy by branding itself as a city of greeneries and therefore recommend the authority and concerned parties to adopt the proposal”*.

It is further noted: *“As a study examining different target stakeholders’ perceptions on mainstreaming urban green in Hong Kong’s city branding practice, the findings carry significant implications. Hypothesising the compatibility between city branding and urban greening, the results from the survey and focus groups establish a high demand for Hong Kong to strengthen its city brand through urban green”*.

However, there are obstacles to Hong Kong’s adopting a greener brand. These include:

- poor public awareness and knowledge of urban greeneries and their advantages/functions
- an obvious lack of urban green spaces currently, so there is a lack of exposure to greeneries for most citizens
- conflicting government policies favouring the built environment e.g. gradual reduction of country park buffer zones and green belts for residential construction

*Recommendations*

The dissertation concludes with sensible recommendations, such as:

- (a) the current “Asia World City” brand should be reviewed by the government;
- (b) divert resources from tourism campaigns highlighting commercial aspects of the city (e.g. shopping) to “nurturing and developing the existing cultural and environmental qualities” of Hong Kong;
- (c) connect the urban greeneries across the city to create a “green-on grey” experience;
- (d) reform the government’s greenery-related institutional structure;
- (e) establish greeneries for education and communication;
- (f) innovate means of creating additional urban greening;
- (g) enhance public participation in urban greening.

The author’s wise, final comment is: *“throwing light on the value of urban green to city brand and hence mainstreaming the green resources, the ultimate goal of this paper is to encourage the protection and conservation of these resources. Rather than seeing them as merely patches of green in the city and non-essential, and converting these spaces into yet another development zone, they have been providing essential services to the environment, society and economy. Taking the perceptions on urban greeneries found in this study into account, their existence and disappearance are influential to the well-being of and sense of belonging to a society. Particularly for Hong Kong, while the cityscape is rapidly developing, the authority must recognise one of the city’s absolute strength, direct resources and align policies to maintain and nurture this unique attribute”*.

We entirely agree!

## TOWN PLANNING

### Draft Tai Tan, Uk Tau, Ko Tong and Ko Tong Ha Yeung Outline Zoning Plan (OZP)

The Chief Executive in Council approved the Tai Tan, Uk, Tau, Ko Tong Ha Yeung Outline Zoning Plan on 25 August 2017.

The planning scheme area of the OZP, covering about 70.79 hectares is surrounded by Sai Kung East and Sai Kung West Country Parks and fronts Ko Tong Hau in the northeast. The area is planned to serve two purposes: (1) protecting its high conservation and landscape value and (2) consolidating village development to prevent undesirable disturbances to the natural environment in that area.

Specific Zones are:

- (1) about 5.40 hectares are zoned “Village Type Development” to designate both the existing recognised villages and areas of land and considered suitable for village expansion;
- (2) about 1.77 hectares are zoned “Government, Institution or Community” (“G/IC”) facilities, including a public toilet at Ko Tong Ha Yeung, and two refuse collection points at Wong Shek Pier and Ko Tong Ha Yeung, etc;
- (3) about 0.08 hectare is zoned “Other Specified Uses” annotated “Pier”;
- (4) about 0.21 hectare, comprising mainly woodlands, shrublands, seasonally wet grassland, marshes and streams including the Tai Tan Ecologically Important Stream and their riparian zones, is zoned Green Belt (“GB”) to provide a buffer between village type developments and the country parks;
- (5) about 0.57 hectare is zoned “Conservation Area” to protect and retain the existing natural landscape, ecological or topographical features of the area for conservation, educational and research purposes; and
- (6) about 2.53 hectares are zoned “Coastal Protection Area”.

[Town Planning Board Press Release, 25/08/2017]

#### **Draft North Point Outline Zoning Plan approved**

The Chief Executive in Council approved the North Point Outline Zoning Plan (“OZP”) on 25 August 2017.

The planning scheme area of the OZP, covering approximately 277 hectares, is located in the northern part of Hong Kong Island, and includes the new reclamation for the Central-Wan Chai Bypass as well as the existing built-up area along the harbourfront.

Specific Zones are:

- (1) about 47.9 hectares are zoned for residential developments;
- (2) about 0.4 hectare, covering four industrial buildings on King’s Road and Tsat Tsz Mui Road, is zoned for residential use to encourage the phasing out of the existing industrial uses;
- (3) about 19.3 hectares are zoned “Commercial/Residential” to reflect the general character of existing developments;
- (4) about 4.6 hectares are zoned “Commercial” for uses such as office, shop, services, place of entertainment, eating place, hotel and commercial/shopping centre;
- (5) about 6.3 hectares are zoned “Comprehensive Development Area” (“CDA”), of which three sites on Oil Street are intended for comprehensive developments, including residential, commercial, and/or leisure and tourism-related uses with open space;
- (6) A total of 27.5 hectares are zoned G/IC to serve local and district needs;
- (7) A further 34.4 hectares of land are zoned “Open Space” to provide outdoor open-air space for both active and/or passive recreational uses. This covers Victoria Park and Choi Sai Woo Park; and
- (8) about 87.9 hectares of wooded hill slopes are zoned “GB” to promote conservation of the natural environment.

To preserve views to the ridgelines and improve air ventilation within the area, specific building height restrictions are imposed for various development zones to provide better control of the building height profile.

[Town Planning Board Press Release, 25/08/2017]

#### **Approved Tseung Kwan O Outline Zoning Plan amended**

The Chief Executive in Council announced amendments to the approved North Point OZP on 11 August 2017.

The amendments mainly involve the rezoning of the following sites:-

- (1) A GB site to the north of Tseung Kwan O Village, a GB site to the northwest of Ying Yip Road, a site zoned GB and G/IC to the south of Chiu Shun Road, a GB site to the west of Yau Yue Wan Village and a GB site to the east of Hong Kong Movie City, to Residential zone for public housing Developments; and
- (2) an area zoned G/IC at Tin Ha Wan Village to Village Type Development zone to reflect the existing village development
- (3) An art studio (excluding those involving direct provision of services or goods) is also incorporated in the Residential (Group E) zone.

[Town Planning Board Press Release, 11/08/2017]

#### **Approved Tai Po Outline Zoning Plan amended**

The Chief Executive in Council announced amendments to the approved Tai Po Outline Zoning Plan on 4 August 2017.

The amendments mainly involve the rezoning of the following sites:-

- (1) A G/IC site at Pok Yin Road to “Residential (Group B)9”;

- (2) A GB site at Ma Wo Road near Classical Gardens I to “Residential (Group B)10”; and
- (3) A Residential (Group C) (“R(C)”) site at Yau King Lane to R(C)10 for proposed housing developments.

It is also proposed that the building height restriction of a G/IC site be revised from three storeys to eight storeys for the development of a proposed clinic.

[Town Planning Board Press Release, 04/08/2017]

## WEST KOWLOON CULTURAL DISTRICT

### The 61<sup>st</sup> Board Meeting of West Kowloon Cultural District Authority

The Board of the West Kowloon Cultural District Authority (“WKCD”) held its 61<sup>st</sup> meeting on 9<sup>th</sup> May 2017.

Members were informed that the external building envelope of Xiqu Centre has been completed. The first phase of the Art Park will be completed by the end of this year.

Further, it was reported to the meeting that the third Producers’ Network Meeting and Forum (“PNMF”) to be held in May will focus on co-production planning and networking strategies. In this 4-day event, industry leaders will not only share experiences in co-production and joint network collaboration, they also present their concepts for future creative projects and look for partners and collaborators.

It was noted that WKCD had received a Silver Award in the non-commercial category of the “Best .hk Website Awards for outstanding performance” organised by the Hong Kong Internet Registration Corporation Limited.

[WKCD Press Release, 09/05/2017]

### The 63<sup>rd</sup> Board Meeting of West Kowloon Cultural District Authority

The Board of the WKCD held its 63<sup>rd</sup> meeting on 11 July 2017.

It was reported to the meeting that, pursuant to the Collaborative Agreement with the Palace Museum dated 29<sup>th</sup> June 2017, WKCD will continue to work with Rocco Design Architects Limited to develop the detailed design of Hong Kong Palace Museum.

A 100% self-driving and environmentally friendly autonomous vehicle will be tested in the Nursery Park in the coming months. This new form of transportation will enhance accessibility of the facilities in West Kowloon Cultural District in the future.

Members were also briefed that, in terms of construction, the ongoing projects such as Xiqu Centre, M+ and Art Park are progressing well. Regarding Lyric Theatre Complex and Extended Basement in Zone 3B, basement construction will commence as soon as funding is approved by the Legislative Council.

[WKCD Press Release, 11/07/2017]

### Lawmakers criticise the spending of HK\$2 million on autonomous car

The WKCD proposed to seek an extra HK\$2 million to purchase a self-driving vehicle which is expected to carry up to 11 passengers to foster driver-less responsible environmental policies in the cultural district.

The WKCD will start testing one of the cars in the next coming months. These cars are equipped with sensors, enabling them to detect obstacles and to identify traffic as well as road signs.

A LegCo subcommittee that monitors the implementation of the WKCD project questioned whether it was necessary to have such advanced vehicles. Legislators were also concerned with the need to amend existing road regulations, which do not cater for autonomous vehicles. Representative of the WKCD replied that a temporary permit from the Transport Department to carry out driving tests had already been obtained.

[South China Morning Post, 06/07/2017]

## HONG KONG BRIEFING

### Plover Cove Reservoir proposed for housing

A study by the University of Hong Kong has proposed large-scale reclamation works, including filling up Plover Cove Reservoir, to increase the supply of land for residential housing. Their proposal is that 2,000 hectares of the reservoir and its catchment area be reclaimed, as the ecological value was already lost when the reservoir was first built.

The authors also recommended that the government should not grant extensions (usually of 50 years) of leases, in order to push developers using their own land reserves.

[The Standard, 26/07/2017]

### Unused public housing space enquiry

The Ombudsman will investigate the Housing Department’s long-held practice of leaving substandard rooms in public housing estates unused.

The Ombudsman noted that some older buildings often have rooms that cannot be used as flats, as they fail to meet the statutory requirements under the *Buildings Ordinance*, and that it is questionable that the Housing Department has adopted proper measures to convert these vacant storage units into rental housing units.

[The Standard, 26/07/2017]



### **Palm oil spillage forces closure of beaches**

Ten beaches on outlying islands and on Hong Kong Island were closed on Sunday due to palm oil spillage. The affected beaches are: Hung Shing Yeh, Lo So Shing, Pui O, Upper Cheung Sha, Lower Cheung Sha, Tong Fuk, Repulse Bay, Middle Bay, South Bay and Chung Hom Kok

The palm oil spillage was caused by a collision between two cargo ships in the Pearl River estuary in mainland waters on 3 August 2017.

[RTHK, 07/08/2017]

### **Options for new houses**

Members of the 30-person Task Force on Land Supply have pointed out the need for advanced, long-term strategic planning to address the critical issue of sourcing new land for housing development.

It is estimated that Hong Kong will need approximately 9,000 hectares for construction over the next 30 years. Hence, the Task Force expressed that land supply strategies, such as reclamation and building on fringes of country parks, need to be discussed and studied. Such studies should reflect cost-benefit considerations for new towns, including future investment returns from land sales, construction costs, traffic, potential job opportunities and ancillary and community facilities.

[SCMP, 30/08/2017]

### **Subsidised flats to be sold at discount**

The Task Force on Land Supply has announced that subsidised flats will be built under a new scheme. The flats will be sold at half the market price to young families who are permanent residents and also first-time buyers.

Details of the new scheme will be provided in the policy address of the Chief Executive in October 2017.

[The Standard, 07/09/2017]

### **Waste paper crisis**

Recyclers are bracing themselves for the full impact of a temporary halt in the collection of waste paper by exporters from today. The business association behind the industrial action hopes the pain will be short-term – a stoppage of at least one week is planned – but the effects were already cascading down the supply chain.

“Street collectors are putting up signs saying they are no longer accepting [waste paper],” said Jacky Lau Yin-shing, director of the Recycle Materials and Reproduction Business General Association. “For us [exporters], we’ll only be able to handle stock up to the end of this month. We’re not signing any new contracts with collectors for October.”

To deal with the fallout, the Environmental Protection Department will activate a contingency plan, which includes freeing up sites for storage at the EcoPark and Nim Wan in Tuen Mun as well as 16 public cargo berths. The Food and Environmental Hygiene Department also planned to implement “urgent” measures.

Approximately 80,000 tonnes of waste cardboard, newspaper and office paper are collected in the city each month, and almost all of it is exported over the border due to the city’s lack of sorting and processing capacity and the mainland’s demand for raw materials.

But this month, about 1,000 recycling plants across China failed to obtain permits to import foreign waste, causing a logjam of stock in Hong Kong. The association had said that if collections continued, its warehouses and docks (in Hong Kong) would be filled to the brim within weeks.

Pressure was believed to have stemmed from China’s national policy tweak in July, which aims to ban 24 types of polluting “foreign rubbish” imports by the year end.

“The government does not grasp the danger of this situation and this is disappointing,” a paper recycler said. “About 30 to 40 per cent of stock can be diverted to Southeast Asia, but that still leaves about 50,000 tonnes with nowhere to go.”

[SCMP, 15/09/2017]

### **Increase in wildlife trafficking**

Hong Kong customs officers have seized HK\$120 million in illegal endangered wildlife products, such as ivory and rhino horn, in the first eight months of this year – a 62 per cent jump compared with the same period in 2016.

Out of 292 cases in total, 84 involved smuggling by passengers arriving at Hong Kong International Airport, compared with just 37 similar cases in the first eight month of last year. The value of endangered species products smuggled by visitors to the city reached HK\$12.31 million – a more than six-fold jump. The number of seized incoming air packages also climbed by 36 per cent to 87. Officers found smugglers disguising pangolin scales as potato chips, concealing ivory in computer cases and even wrapping live turtles in socks before hiding them in luggage or in boxes.

Louise Ho Pui-shan, assistant commissioner of the Customs and Excise Department, said that traffickers had recently turned from smuggling bulky items via sea to brining in protected species bit by bit in air parcels or by using air passengers to minimise risk. “Court sentences have been heavy. Traffickers saw the risks, prompting them to smuggle small quantities each time to reduce loss and avoid being caught”, Ho said.

Overall, customs officers confiscated 3,300 smuggled endangered species products weighing a total of 49 tonnes, compared with 1,900 items weighing 134 tonnes seized in 226 cases between January and August in 2016.

In Hong Kong, any person found guilty of importing or exporting and endangered species without a licence is liable to a maximum fine of HK\$5 million and imprisonment for two years.

[SCMP, 18/09/2017]

## ADVISORY COUNCIL ON THE ENVIRONMENT (ACE)

### Summary of Minutes of the 224<sup>th</sup> Meeting of the ACE held on 5 June

There was one main item for consideration namely: to review the sixth Technical Memorandum for Allocation of Emission Allowances for Power Plants

Mr. Dave Ho and Mr. Lau Man-pang briefed Members on the Technical Memorandum (TM) under section 26G of the *Air Pollution Control Ordinance* (APCO) (Cap. 311) for allocating emission allowances for power plants. Members were invited to support the proposal on further tightening emission allowances for power plants, starting from 1 January 2022, by way of issuing a new TM under the APCO.

Referring to the retirement of the existing coal-fire generating units, Mr. Lau told Members that the designed service life of coal-fired generating units was 35 to 40 years. It is expected that several coal-fire generating units would retire in the coming 5 to 10 years and it is suggested that a study on the impact of the retirement of coal-fire generating units be conducted.

As to the formulae for allocating emission allowances to the power plants, Mr. Dave Ho explained that the allowances are divided into two parts, namely: (1) the projected emissions under the adoption of Best Practical Means (BPM) and (2) the emissions that could be offset by renewable energy sources.

Mr. Dave Ho also told the members that it was the government's policy not to approve new coal plants from 1997 and that new power generation units might be gas-fired units or other cleaner alternatives. It was also noted that despite the need to develop renewal energy sources, such facilities would be limited in Hong Kong. To date, the two power companies have conducted studies for establishing wind farms at two locations in Hong Kong.

### Summary of Minutes of the 225<sup>th</sup> Meeting of the ACE held on 3 July

There were two main items for consideration, namely: (1) to mandate vessels to use compliant fuel within Hong Kong waters, and (2) to report on the promotion of the charter on external lighting.

#### *(1) Proposal to Mandate Vessels to Use Compliant Fuel within Hong Kong Waters*

Mr. Dave Ho and Mr. Brian Lau briefed Members on the proposal to introduce a new regulation under the *Air Pollution Control Ordinance* (APCO) requiring vessels to use compliant fuel (i.e. that produces much lower sulphur emissions) within Hong Kong waters from 1 January 2019.

Members were advised that a new regulation will be introduced such that vessels within the Hong Kong waters would be subject to the same control as the domestic emission control area (DECA) set up under a Cooperation Agreement on Prevention and Control of Air Pollution from Vessels signed in December 2016.

In responding to a member's opinion on the requirement on ocean-going vessels to use a fuel with sulphur content not exceeding 0.5% by weight, Mr. Dave Ho told the members that the current global sulphur content limit set by the International Maritime Organisation is 3.5% for fuels used by ocean-going vessels. He also advised that the Ministry of Transport would review the implementation of the DECA by the end of 2019, including whether or not to tighten the fuel sulphur requirement of the DECA to 0.1%.

#### *(2) Progress Report on the Promotion of Charter on External Lighting*

Mrs. Dorothy Ma briefed Members on the Progress Report on the Promotion of Charter on External Lighting (the Charter).

In replying to a question as to whether the government would set a target in the recruitment of signatories where external lighting complaints were serious, Mrs. Ma said that the EPD would invite the owners of the installations to sign the Charter. It is also noted that consultants had been engaged to check signatories' compliance with the Charter to switch off external lighting at 11 p.m.

Mrs. Ma also reported that some business entities were pleased to sign the Charter after their lighting installations had been upgraded. She also advised that awards and certificates would be granted to signatories that adhere to the switch-off requirement under the Charter.

## CLIMATE CHANGE

### Massive iceberg breaks off from Antarctica

An iceberg split off from Antarctica's Larsen C, the fourth largest ice shelf in Antarctica, sometime between 10 July 2017 and 12 July 2017. The size of the iceberg was about 5800 square kilometres, amounting to approximately 10 per cent of Larsen C.

Experts reported that the Antarctic Peninsula has been one of the fastest warming places on the planet throughout the latter half of the 20<sup>th</sup> century. They believe that there are mechanisms by which this rift could be linked to climate change.

The U.S. National Ice Centre will monitor the trajectory of the new iceberg, named A-68.

[NASA Press Release, 12/07/2017]

### Britain to ban sale of petrol and diesel vehicles

Britain is joining France in banning the sale of new petrol and diesel vehicles from 2040 to improve air quality. The government considers that air pollution poses the most serious environmental threat to public health, costing the country up to £2.7 billion in lost productivity per year.

The UK government has also been urged to introduce charges for vehicles entering cities' "clean air zones". However, the government is reluctant to introduce new taxes that punish motorists.

The UK government will also help towns and cities by providing a £255 million implementation fund to develop plans to address poor air quality, which will include reprogramming traffic lights.

[SCMP, 26/07/2017]

### European death toll in weather disasters to rise

A study has established that the European death toll from weather disasters could rise 50-fold by 2100.

Assuming there is no reduction in greenhouse gas emissions, the study predicts that heat waves will be the most deadly weather-related disaster, causing 99% of all future weather-related deaths. Such heat waves will kill more than 150,000 people in Europe each year by the end of this century. As well, the number of European deaths caused by coastal flooding will also increase, from six deaths per year at the beginning of the century to 233 deaths per year by the end of 2100.

[SCMP, 05/08/2017]

### Climate change could wipe out a third of parasite species

Studies have revealed that a third of all parasite species could be rendered extinct due to climate change. If that occurs it could lead to unpredictable invasions of surviving parasites of new areas, affecting both animals and human beings.

Parasites play an important role in ecosystems by providing up to 80% of the food web links. The competition amongst a wide range of parasites can also help slow down the spread of diseases.

Scientists commented that the threat to the world's parasites is at a dangerous level, and they anticipate that parasite biodiversity in 2070 or beyond will potentially look substantially different from that of today.

[The Guardian, 06/09/2017]

### Asia's glaciers to shrink by a third by 2100

High mountains of Asia hold the biggest store of frozen water outside the poles and feed many of the world's great rivers, including the Ganges. However, Asia's mountain glaciers will lose at least a third of their mass through global warming by the century's end, with dire consequences for millions of people who rely on them for fresh water, researchers have said. This is a best-case scenario, based on the assumption that the world manages to limit average global warming to 1.5C (2.7F) over pre-industrial levels, a team wrote in the journal *Nature*.

"To meet the 1.5C target will be a task of unprecedented difficulty," the researchers said, "and even then, 36% (give or take 7%) of the ice mass in the high mountains of Asia is projected to be lost" by 2100. With warming of 3.5C, 4C and 6C respectively, Asian glacier losses could amount to 49%, 51% or 65% by the end of the century, according to the team's modelling study.

The high mountains of Asia comprise a geographical region surrounding the Tibetan plateau, holding the biggest store of frozen water outside the poles. It feeds many of the world's great rivers, including the Ganges, the Indus and the Brahmaputra, on which hundreds of millions of people depend.

Nearly 200 nations adopted the Paris agreement in 2015, which sets the goal of limiting warming to a level "well below" 2C, while "pursuing efforts" to achieve a lower ceiling of 1.5C. Earth's surface has already warmed by about 1C, according to scientists.

For high-warming scenarios, experts predict land-gobbling sea-level rise, worsening storms, more frequent droughts and floods, species loss and the spread of disease.

The Asian high mountains, the new study said, were already warming more rapidly than the global average. A global temperature rise of 1.5C would mean an average increase in the region of about 2.1C, with differences between mountain ranges – all of which will warm by more than 1.5C. The Hindu Kush mountain range would warm by about 2.3C and the eastern Himalayas by 1.9C, the study forecast. "Even if temperatures stabilise at their current level, [glacier] mass loss will continue for decades to come," the researchers added. For the high mountain glaciers to survive, "it is essential to minimise the global temperature increase".

Swaths of South Asia and China depend on meltwater from Himalayan glaciers for drinking water, electricity generation and irrigation. At the same time, the regions are also vulnerable to more intense flooding from accelerated glacier melt, combined with heavier rains and superstorms boosted by global warming.

A study in July in the journal *Nature Climate Change* said there was only a 5% chance of holding global warming under 2C. For 1.5C, the odds were about 1%. On current trends, some experts project Earth is on track to warm by about 3C.

[The Guardian, 14/09/2017]

### China fuels electric dream

Are we really coming to the end of all petrol, diesel and gas-powered vehicles? Governments are starting to make bold declarations in that direction. India and Germany are in on the act – though even those that have announced a deadline, like Britain and France, for 2040 – have placed it so far ahead that circumstances, such as changed political tides, may intervene.

The most interesting declaration is China's, made last weekend by the vice-minister of industry, Xin Guobin, who announced that the government was working on a timetable to end the production and sales of fossil-fuel powered cars and trucks – without indicating any likely dates. China has said it intends to cap its carbon emissions by 2030, to keep its Paris climate accord promise.

Reining in car emissions is a natural target. Yesterday, in a hazy Beijing, particle emissions were running at 167. *The World Health Organisation* says 50 is the upper limit for health safety.

China overtook the US in 2009 as the largest market for passenger cars and the gap has kept widening. Last year, car sales grew by 13.7 per cent to 28 million, faster than in the previous three years, thanks to the government waiving the purchase tax for vehicles with small engines. This year the rate of increase has slipped to 4.3 per cent, chiefly due to a rise in sales tax. But the market is still growing.

China continues to sell large numbers of the world's most luxurious cars despite taxes that can, depending on the province or city, reach 70 per cent of the sales price. But "new energy vehicles" – including electric cars and hybrids that can be charged by plugging into a power source – are starting to make inroads. The most recent Beijing Auto Show featured 140 types of NEVs.



Honda is planning to launch, through its Guangqi and Dongfeng joint ventures, an electric car in China next year. Internet company Nio has said its battery-powered sport utility vehicle will be on sale before the end of the year. Volkswagen, in a joint venture with Anhui Jianghuai, will bring out an electric SUV in 2018.

The Zotye Yun 100 claims to be the cheapest electric car in China, retailing at just US\$12,000 after subsidies have been rolled in. In 2016, about half a million electric vehicles were sold in China, 340,000 of them passenger cars, more than double US sales of 155,000.

As well, China will introduce an incentive programme that awards carmakers with credits for NEVs and deficits for larger, petrol vehicles.

[*The Australian*, 14/09/2017]

### Renewable energy near parity with coal

Wind and solar energy, despite their intermittent output, are already matching or beating the competitiveness of coal-fired power in many regions globally, including in several parts of China, according to one of the founders of the nation's second largest wind turbine maker. This is partly due to increasing deployment of software and infrastructure allowing so-called energy internet of things technology – the combination of smart devices with data analytics – to facilitate smart energy distribution and storage to cut the overall cost of wind and solar energy.

“The LCOE [levelised cost of electricity] will fall further ... [perhaps by] a few per cent a year,” Envision Energy group executive director Felix Zhang Xuyu told the *South China Morning Post* in a recent interview. “There is no reason to build more coal-fired power plants. Globally, in the last two years, more renewable power plants were built than fossil fuel ones.” LCOE is the average price a power plant must receive for each unit of power sold to break even over its lifetime.

Coal is abundant and relatively cheap in the mainland. But in several portions of the renewable energy rich northern regions, technological advancement has allowed wind and solar power to become as competitive as pollution-prone coal-fired facilities. Coal, meanwhile, continues to supply much of the mainland's power needs.

There are, however, drawbacks with renewable energy. Due to grid bottlenecks and the intermittent nature of wind and solar power, a portion of the output generated by many wind and solar projects is wasted and not sent to the grid, making them less competitive. A key reason for the bottlenecks is the need to send excess power in the energy rich but sparsely populated western and northern regions to major consumption centres in central and coastal provinces.

Industry-wide overcapacity in most parts of the country – the worst in more than half a century – has been driven by a power plant building spree over the past few years and slower power demand growth has not helped to absorb this excess power.

Earlier this month, Beijing announced China's first-ever batch wind-power projects, which will charge electricity prices in parity with coal-fired power, as it pursues a goal to cut subsidies to all onshore wind projects by 2020. Authorities have guaranteed that all power generated by the approved projects will be bought by local state-owned grid operators, thereby bolstering their commercial viability even if they receive no subsidy.

China has the world's largest installed wind and solar power capacity and is also the largest equipment producer for both.

[*SCMP*, 16/09/2017]

### Spring heatwave on Australia's east coast

The east coast of Australia is facing a spring heatwave this weekend, with temperatures expected to soar past 40 degrees Celsius in some areas of the country. In New South Wales, the Bureau of Meteorology (BoM) is expecting the mercury in Bourke to reach 40C, in what would be a new September record for the state.

Other areas of the state are expected to reach the high 30s. Total fire bans are in place across NSW – including the Greater Sydney region, the Greater Hunter, the Illawarra/Shoalhaven and Central Ranges. Forecast temperatures are well-above the September average for Sydney, where the maximum is usually approximately 20C.

BoM duty forecaster said strong winds will push the heat from the middle of Australia across NSW. Parts of Queensland are also set for unseasonably warm conditions; Brisbane is expected to reach 34C this weekend, the BoM said. That is almost 10 degrees higher than the average for this weekend.

The hot and dry conditions have also prompted fears for significant bushfires. Extreme fire danger warnings are in place for the Maranoa and Warrego areas. Other parts of southern Queensland are also under severe warnings. Queensland Fire and Emergency Services spokesman James Haig said standby fire crews and extra aircraft are ready to respond.

Victoria is also facing its first day of dangerous bushfire conditions. Firefighters are on standby in the Mallee, in the state's north-west, where temperatures are forecast to reach the mid-30s with winds gusting up to 90 kilometres per hour.

That is also higher than the average maximum experienced in Victoria during September, when temperatures usually are just below 20C. But the BoM said that the warmer conditions this weekend would not last, as temperatures are expected to fall early next week.

[*ABC News*, 23/09/2017]

## REGIONAL & INTERNATIONAL

### CHINA

#### Turning waste into fuel

The mainland is trying to “kill two birds with one stone” by turning agricultural waste into biofuel for cars under a nationwide policy to expand the use of ethanol in petrol announced yesterday. But some experts said the plan – which aimed to reduce smog from burning straw stalks and other agricultural waste as well as cut demand for fossil fuels – might not be as environmentally friendly as it seemed.

By 2020, all petrol for vehicles will need to contain at least 10 per cent ethanol, a renewable fuel made from corn and other plant materials, according to a statement from the National Development and Reform Commission, the National Energy Administration and other departments.

Other countries, including the United States and Brazil, require petrol to contain a certain amount of ethanol. The US and Brazil pioneered the use of ethanol as fuel but mainly produce it from corn and sugar cane. As well as using up stockpiles of corn, the mainland wants to produce ethanol from cellulose – a plant's stryng fibre rather than its seeds or fruit – in a "structural way" by 2025.

Some 5 per cent of the 170 million tonnes of corn and cassava China trades on the global market each year could generate 3 million tonnes of biofuel, according to the statement. But 30 per cent of its straw stalks and other agricultural waste could produce 20 million tonnes of ethanol.

Emissions from farmers burning waste after harvesting have been identified as a serious source of air pollution, and the China Meteorological Administration uses satellities to monitor the fires.

The government is trying to clean up its notorious pollution problem, pledging to reduce greenhouse gas emissions and investing heavily in electric cars. It has already introduced ethanol in petrol across 11 provinces, including Jilin, Liaoning and Guangxi.

But Luo Yong, an environmental scientist with the Chinese Academy of Social Sciences, said the plan for wider use of ethanol petrol could make pollution worse. "The process of producing ethanol petrol could also produce harmful emissions," he said. "The result of this plan might not be as good as we think."

US efforts to use food crops as green fuel sources have been criticised for raising global food prices, eroding soil quality and increasing instead of reducing greenhouse gas emissions.

[SCMP, 14/09/2017]

## PAKISTAN

### Arsenic poisoning a serious risk

Approximately 50 million people are at risk of arsenic poisoning from contaminated groundwater in Pakistan's Indus Valley – far more than previously thought, according to a new study.

Pakistan is aware of the worsening problem. Arsenic levels are rising in some areas as people increasingly and indiscriminately draw from the country's underground aquifers, said Lubna Bukhari, who heads the government's Council for Research in Water Resources. "It's a real concern," she said. "Because of lack of rules and regulations, people have exploited the groundwater brutally, and it is driving up arsenic levels."

The authors of the study developed a map highlighting areas of likely contamination based on water quality data from nearly 1,200 groundwater pumps tested from 2013 to 2015, and accounting for geological factors including surface slope and soil contents. They determined approximately 88 million people were living in high-risk areas.

Given that about 60-70 percent of the population relies on groundwater, they calculated that roughly 50 million – maybe even 60 million – were potentially affected. That's equal to at least a third of the 150 million already estimated by the World Health Organisation to be drinking, cooking and farming with arsenic-laced water worldwide.

"This is an alarmingly high number, which demonstrates the urgent need to test all drinking water wells in the Indus Plain," with hotspots around the densely populated cities of Lahore and Hyderabad, said the study's lead author, Joel Podgorski, of the Swiss Federal Institute of Aquatic Science and Technology, known as Eawag.

The findings were published on 23 August 2017 in the journal *Science Advances*.

The high-risk area mapped out in the study broadly covers the middle and lower reaches of the Indus River and its tributaries, before they empty into the Arabian Sea. Scientists had expected this area might be affected. Similar geographical areas along the Ganges River in neighboring India and Brahmaputra in Bangladesh also contain pockets of arsenic contamination.

Normally, that arsenic would stay in the ground. But in the last few decades, South Asian countries, concerned with pathogen-infused surface water, have been pumping enormous volumes of groundwater, causing the water tables to drop drastically and tapping into new water pockets tainted by the colourless, odourless toxin.

The WHO considers arsenic concentrations above 10 micrograms per litre to be dangerous. Pakistan's guideline is five times that, and many of its wells test much higher. Arsenic is naturally occurring and kills human cells – causing skin lesions, organ damage, heart disease and cancer. There is no cure for arsenic poisoning.

"This study is important because it draws attention to an overlooked – yet solvable – problem of vast magnitude affecting the health of millions of villagers," said geochemist Alexander van Geen of Columbia University's Lamont-Doherty Earth Observatory, who was not involved in the study. He said the patterns it identifies are broadly consistent with data he and other researchers have collected from some 10,000 well tests in the region.

Shallow wells are less likely to be tainted. Deeper ones, such as those run by the government's Drinking Water Filtration sites, may be more at risk. This makes the problem especially acute for thousands of city-dwellers who have no access to clean water and rely on what the government supplies.

A survey submitted to Pakistan's parliament last year suggested nearly 80 percent of water sources in 2,807 villages across 24 districts were contaminated with bacteria or other pollutants, to levels that were unsafe to drink.

Now, "the presence of arsenic in drinking water is becoming a widespread health problem," said Luis Rodriguez-Lado, a chemist with the University of Santiago de Compostela in Spain who was not involved in the study. Yet "there is a general lack of information" about which areas in Asia are most at risk.

For Pakistan, Bukhari said, the problem is now urgent. Her department is already working with the U.N. Children's Fund to provide cheap anti-arsenic water filters to poor villagers in the worst-affected areas. "We should immediately discourage the indiscriminate ground water exploitation," she said, noting that even city-dwellers with municipal water access were digging tube wells "to have a lavish supply of water".

But the country also needs to test countless tube wells and identify which have tapped into arsenic, possibly determining which depths might be safer, he said. If researchers can find a depth at which "there is no arsenic, we can dig wells that stop before the water is contaminated," Bukhari said.

[Chicago Tribune, 23/08/2017]

## INDIA

### *Poor air quality is widespread*

Delhi has been in the spotlight for its poor air quality, but towns and villages near industrial clusters and coal mines may be far worse off.

A recently released report, *Poisoned*, on water, air and soil pollution in Raigarh district of Chhattisgarh, highlights a severe pollution crisis in the region with levels of several carcinogenic heavy metals in air, water and soil not meeting standards. This is probably the first time environmental parameters in this region are being monitored, say authors of the study. No town or city in Chhattisgarh is being monitored under the National Air Quality Index (NAQI) programme of the Centre.

Residents of villages in Tamnar block had been complaining of visible pollution and associated health impacts for a long time, but the state or central pollution control board (CPCB) did not conduct any studies here. Villagers are now demanding that the Chhattisgarh government immediately initiate continuous monitoring of emissions and health data, apprehend the polluters and take remediation measures.

Scientists found 9 out of 12 soil samples from the villages to be heavily contaminated by fly ash. Levels of heavy metals like chromium (Cr), nickel (Ni), Cadmium (Ca) and Antimony (S) in soil were found to be exceeding the Dutch Intervention Levels in many cases. The environment ministry's guidance document for assessment and remediation of contaminated sites lists the Dutch intervention levels for mapping of soil and remedial action.

Based on this, scientists and health experts – Dr Manan Ganguli from UK and Dr Mark Chernaik of the Environmental Law Alliance US, who interpreted the lab findings for the report, – said levels of chromium, nickel, cadmium and antimony in soil samples would require remedial action immediately.

Cadmium levels in soil for example were found to be 18 times the safe standard in a village called Regaon, Chromium levels in soil in Kunjemera village was 3.3 times the safe standard.

Water and air samples collected from five villages – Kosampali, Dongamahua, Kodkel, Kunjemera and Regaon were also found to be contaminated with high levels of cadmium, chromium, manganese, selenium and others. In air, levels of manganese in a couple of villages, for example, exceeded health guidelines by 1.75 to 2.48 times, levels of arsenic again in sample from two villages exceeded environment ministry's annual standard by 1.36 to 1.75 times.

[Times of India, 07/08/2017]

## AUSTRALIA

### **Back from the dead**

A simple feather found in the lining of a bird's nest near Lake Eyre, South Australia, has stunned the nation's scientists and rewritten a part of South Australia's history. The feather led to the discovery of a Night Parrot population – a bird presumed extinct with no recorded sighting in South Australia for more than a century.

It is one of Australia's most mysterious birds. Australian Wildlife Conservancy ecologists made the discovery in July after using a helicopter to fly over 600 sq km of land in search of its prospective habitat.

The first sign of the Night Parrot occurred during an annual ecological audit of the Kalamurina Wildlife Sanctuary in 2016, when a camera trap picked up a shape replicating the bird. Ecologist John Young, who rediscovered the Night Parrot in Queensland a few years earlier, knew the shape was not clear enough to be certain, and looked at historical records.

In 1883, Night Parrots had been recorded in similar samphire – plants associated with water – habitat near Lake Eyre. They had been rediscovered in spinifex habitat across Queensland, Western Australia and the Northern Territory.

Mr Young and fellow ecologist, Keith Bellchambers, in July flew over more than 600 sq km of Kalamurina in a helicopter, where an area which had a Wedge-tailed Eagle's nest was adjacent to a prospective samphire habitat.

The team "honed in" on the nest, applying knowledge that Zebra Finches – Australia's most common grassfinch – like to nest under an eagle's nest, and line their nests with feathers. Mr Young found a small "unmistakeable" Night Parrot feather lining the base of a recently-built nest.

The Night Parrot is recognised as endangered in South Australia and is listed as one of 20 threatened birds that the Federal Government hopes to improve the trajectory of by 2020, under its Australia's Threatened Species Strategy.

[The Advertiser, 14/09/2017]

## U.S.A.

### **The future of renewable energy is with the states**

Renewable energy is not at a crossroads in the U.S. so much as on a two-lane highway: while the federal government hits the gas on fossil fuels, states are speeding ahead to develop renewable energy – and reaching new milestones.

For example, in Florida enough solar energy is being collected every year to power all the single-family homes in that state. Three states generate more than one-third of their energy from wind and solar. Some 160,000 electric cars were sold last year – enough to supply the entire population of Fort Lauderdale, Florida. And earlier this year, wind and solar produced one-tenth of the nation's energy for an entire month.

A recent report highlights the states that are most quickly embracing renewable energy. And the leaders are not those many people might expect. Yes, California has some of the most pro-environment laws on the books. But the state that produces the most renewable energy in terms of sheer quantity? It's Texas. The states that generate the largest portion of their power from renewables: Iowa, Oklahoma, Kansas and the Dakotas.

"If you look at the leadership states, they're states that recognize both the environmental and economic benefits of renewables," said Rob Sargent, a co-author of the report and director of the energy program at Environment America, which champions the use of "clean" energy.

Texas set renewable energy goals back in 1999, and again in 2005, which it has since far surpassed. It now produces more wind energy than most countries. The U.S. now generates more power from wind turbines than from hydroelectric dams. Earlier this year, the use of wind power reached a record high, with more than half of the power in a number of Great Plains states coming from wind.

The city of Georgetown, Texas, with a population of 50,000, powers itself entirely with renewable energy. It made the switch in 2012 because of cost. Wind was less volatile than gas and oil prices.

Iowa, another leader in both wind and solar, had a different route. It's second only to Texas in the amount of renewable energy it produces, but the state itself "doesn't have that many remarkable energy policies," Sargent said. "But it's got an immense resource, particularly in one part of the state, and it's surrounded by states that have very strong policies, like Wisconsin and Illinois." Having states that prioritize renewables creates a willing market for energy, and Iowa sells to those states, he added.

Scale is the driving factor making energy cheaper. Unlike fossil fuels, which must be continuously extracted from the ground to provide energy, power generated from the sun and wind is essentially free, advocates say. "With renewable technology, literally 90-plus percent of the cost associated with it is the initial capital investment, because you don't pay for the fuel," Sargent said.

As more and more capacity comes online, the cost per unit of energy drops. Those economics have been causing the price of solar and wind power to drop. Solar is set to become the cheapest power source on Earth in a handful of years, below coal, Bloomberg News recently reported.

And the use of solar power is increasing across the U.S. The amount of solar power currently being collected is enough to fulfill all the energy needs of 5 million single-family homes. About 29 states have total populations under 5 million.

One criticism of renewable energy is that it can be inconsistent. Relying only on wind or solar in a given place puts people at the mercy of changing weather. But improving storage technology over the past decade ameliorates that issue. A number of states – including Illinois, Ohio, West Virginia and Pennsylvania – have increased their capacity to store energy. That means for the first time, batteries are "a viable and flexible option for expanding energy storage capacity," according to the report.

Besides being useful for renewable energy – allowing power collected on a sunny day to be used later when it's raining, for example – better batteries also makes things like electric cars more efficient, potentially allowing for more time between charges.

These technological improvements are happening at the same time as Americans are using less energy overall. Over the past decade, the amount of total energy use in the U.S. dropped 3.6 percent, despite an increasing population and an expanding economy. Every American is using 10 percent less energy than they were in 2007, regardless of where it comes from.

It's not immediately obvious why Americans are using less energy. The cost of power, even of fossil fuel, is historically low, and we haven't exactly been denying ourselves. But our technologies are getting more efficient. Gadgets from light bulbs to cars are evolving to get more juice from the same amount of power.

While the impetus for this innovation sometimes comes from government – such as fuel efficiency standards for cars, which the White House would like to roll back – the benefit of wasting less energy translates into cost savings for the consumer, a proposition with nearly universal popularity.

This is also playing out in the construction industry, with increasing construction of energy-efficient buildings. Heating and cooling can consume half the money spent on a home every year; the prospect of saving funds makes efficiency attractive to many homeowners.

Given the market logic in favor of both trimming energy waste and moving to renewable power, industry observers generally don't believe the federal government's policy reversals can completely derail the shift to clean energy. Environmental advocates, however, worry that the waffling not only slows down progress, but also keeps a growing part of the economy from reaching its full potential.

"From an environmental point of view, we want to be going faster, not slower," Sargent said. "We don't want to waste time by having our foot on both the accelerator and the brake."

[CBS News, 27/07/2017]

## **BRAZIL**

### **Amazon national reserve opened for mining**

Brazilian President Michel Temer has signed a decree allowing a nature reserve in the Amazon rainforest to open for mining. Located in northern Brazil, the 47,000 sq.km Copper National Reserve (Renca), which is about the size of Switzerland, is rich in minerals like gold, zinc, phosphate and manganese, reports Xinhua news agency.

The decree, which was also signed by his minister of Mining and Energy on Wednesday, cancels the park's status as a national reserve. However, it still calls for "the application of specific legislation regarding the protection... of native vegetation, nature (and) indigenous border lands and zones".

The park includes nine different protected zones, two of which are indigenous lands where mining is completely banned, but at least four other zones appear to be accessible to regulated mining activity. Environmental activists say paving the way for mining at the park could exacerbate existing conflicts between mining companies and indigenous groups.

Renca was created in 1984 to prevent mining activity from excessively encroaching on wildlife and indigenous communities.

[Daily World, 24/08/2017]

## **CHILE**

### **One of world's largest marine parks is created**

One of world's largest marine protection areas has been created by Chile off the coast of Easter Island. The 740,000 sq km Rapa Nui marine park is roughly the size of the Chilean mainland and will protect at least 142 endemic marine species, including 27 threatened with extinction.

An astonishing 77% of the Pacific Ocean's fish abundance occurs here and recent expeditions discovered several new species previously unknown to science. Apex predators found in the conservation zone include scalloped hammerhead sharks, minke, humpback and blue whales, and four species of sea turtle.

Matt Rand, the director of the Pew Bertarelli ocean legacy project, which campaigned for the park, said: "This marine reserve will have a huge global significance for the conservation of oceans and of indigenous people's ways of life. "The Rapa Nui have long suffered from the loss of timber, declining ecosystems and declining populations. Now they are experiencing a resurgence based on ensuring the health of the oceans."

The marine park's creation was enabled by a 73% vote in favour of the conservation zone from Easter Island's 3,000 Rapa Nui population in a referendum on 3 September, following five years of consultations.

Extractive industries and industrial fishing will be banned inside the reserve, but the Rapa Nui will be allowed to continue their traditional artisanal fishing on small boats, using hand lines with rocks for weights.

Following creation of a comparable marine protection area around the nearby Pitcairn Islands last year, proposals for a reserve in the Austral Islands' waters could soon create a protected area of more than 2 m sq km. This would have a unifying potential for the Polynesian people.

As global warming takes hold, some scientific papers suggest that marine reserves may also help mitigate climate change and provide a vital carbon sink. The deep, clear and cool waters around Easter Island are also a resilient area for coral reefs.

The International Union for Conservation of Nature has called for 30% of the world's oceans to be protected, but only about 1.6% has so far been covered by marine protection areas.

[*The Guardian*, 07/09/2017]



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**Convictions under environmental legislation: June to September 2017 (October data not available)**

**[Note: the EPD no longer classifies second (and subsequent) offences.]**

The EPD's summary of convictions recorded and fines imposed during the above period is as follows:

**June 2017**

Seventy-nine convictions were recorded in June 2017 for breaches of legislation enforced by the Environmental Protection Department (EPD).

Thirteen of the convictions were under the Air Pollution Control Ordinance, 8 were under the Noise Control Ordinance, 1 was under the Product Eco-responsibility Ordinance, and 57 were under the Waste Disposal Ordinance.

The heaviest fine in June was \$50,000, assessed against a clinic for improper disposal of clinical waste.

**July 2017**

Seventy-two convictions were recorded in July 2017 for breaches of legislation enforced by the Environmental Protection Department (EPD).

Thirteen of the convictions were under the Air Pollution Control Ordinance, 12 were under the Noise Control Ordinance, 4 were under the Product Eco-responsibility Ordinance, 41 were under the Waste Disposal Ordinance, and 2 were under the Water Pollution Control Ordinance.

The heaviest fine in July was \$30,000, assessed against an engineering company for contravening the provisions of a licence.

**August 2017**

Seventy-eight convictions were recorded in August 2017 for breaches of legislation enforced by the Environmental Protection Department (EPD).

Seven of the convictions were under the Air Pollution Control Ordinance, 2 were under the Dumping at Sea Ordinance, 7 were under the Noise Control Ordinance, 1 was under the Ozone Layer Protection Ordinance, 2 were under the Product Eco-responsibility Ordinance, 55 were under the Waste Disposal Ordinance, and 4 were under the Water Pollution Control Ordinance.

The heaviest fine in August was \$100,000, assessed against two construction companies respectively for causing or allowing illegal dumping of substances or articles within Hong Kong waters.

**September 2017**

Forty-eight convictions were recorded in September 2017 for breaches of legislation enforced by the Environmental Protection Department (EPD).

Eight of the convictions were under the Air Pollution Control Ordinance, 4 were under the Noise Control Ordinance, 1 was under the Product Eco-responsibility Ordinance, 33 were

under the Waste Disposal Ordinance, and 2 were under the Water Pollution Control Ordinance.

The heaviest fine in September was \$70,000, assessed against a company for failing to comply with the requirements of a noise abatement notice.

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