Understanding energy poverty in the Asia-Pacific: insights from Hong Kong

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Source: World Green Organisation

Overview

1. Connecting energy and equity
2. The Hong Kong case study
3. Conclusions and future research directions

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Connecting energy and equity

Understanding energy poverty and vulnerability

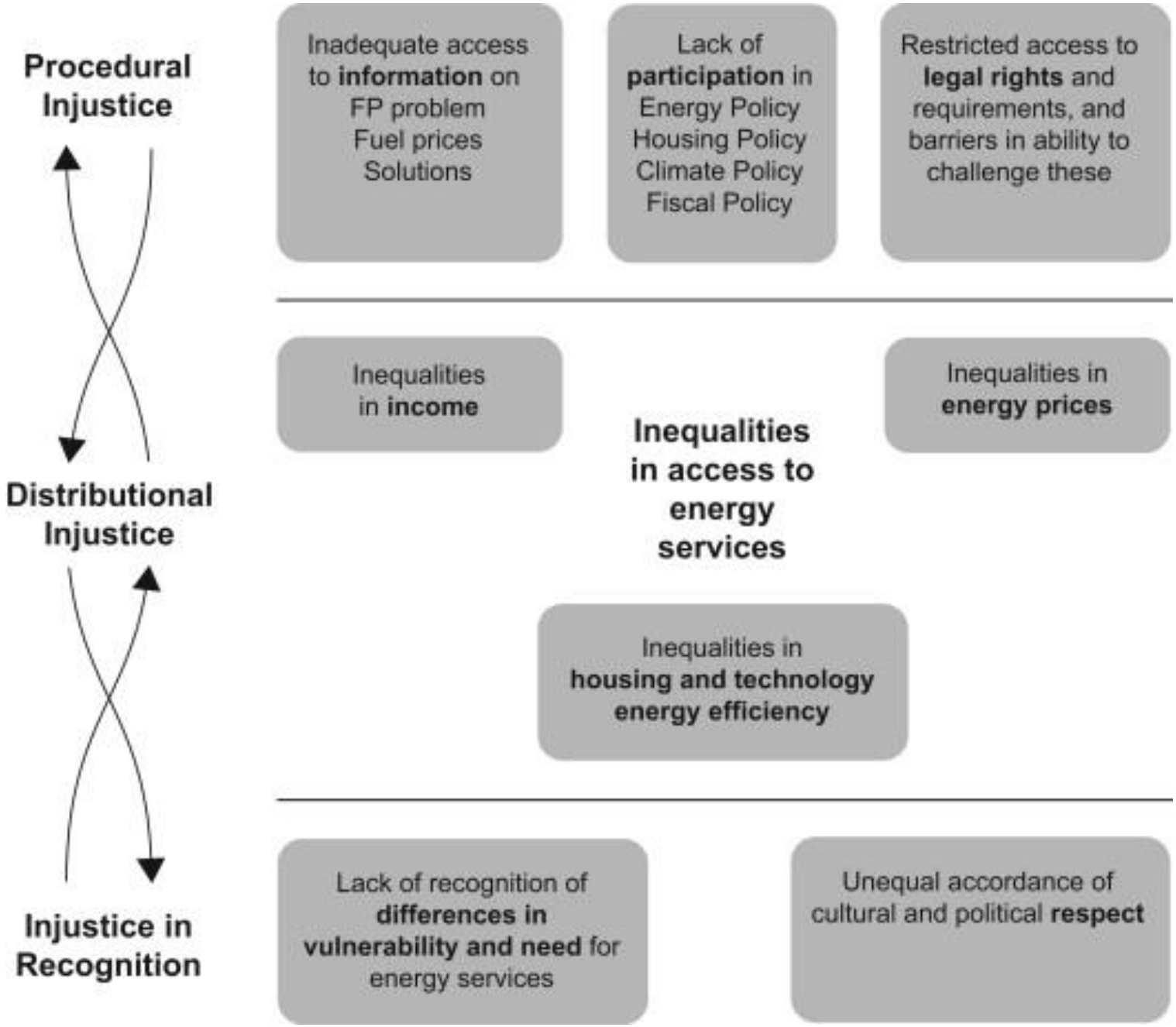
- Fuel/energy poverty: where households cannot afford to adequately heat or cool the home
- Geographical focus: UK; recently Europe, N. America
- A shortage of energy services due to availability or cost exposes households to risk of harm (illness/death)
- Energy a focus of debates about rights and entitlements
- Traditionally defined in static means - the proportion of income dedicated to paying fuel bills
- Energy vulnerability produced in multiple and complex ways, and is dynamic

(Gillard et al, 2017; Walker and Day, 2012)

Energy poverty as injustice

- Morally wrong for people to suffer cold or discomfort causing ill health/ mortality; requires collective action in response
- A need to consider issues of **distribution** – who gets what, where and why – but also to create more equitable **procedures** for involving people in decisions about their energy futures and to give proper **recognition** to the diversity of needs and capabilities of individuals who experience energy vulnerability

(Fuller and McCauley, 2016; Gillard et al, 2017; Walker and Day, 2012)



(Walker and Day 2012)

The Hong Kong case study

Methodology

- Literature review
- Document review
- Preliminary scoping interviews with NGOs, advocacy groups and energy companies

Picture source: Urban Renewal Authority

Poverty in Hong Kong

- Hong Kong's rapid industrialization and economic reforms post-WWII led to decades of growth
- More recently: the Asian Financial Crisis, SARS, global recession of 2008
- 2000s: incomes stagnated while cost of living continues to rise, marked by severely unaffordable housing
- Disparity between Hong Kong's wealthiest and poorest expanding; higher than any other "developed" nation
- Some discussions about amending long-standing minimalist approach to social welfare that characterizes Hong Kong's laissez faire style of governance

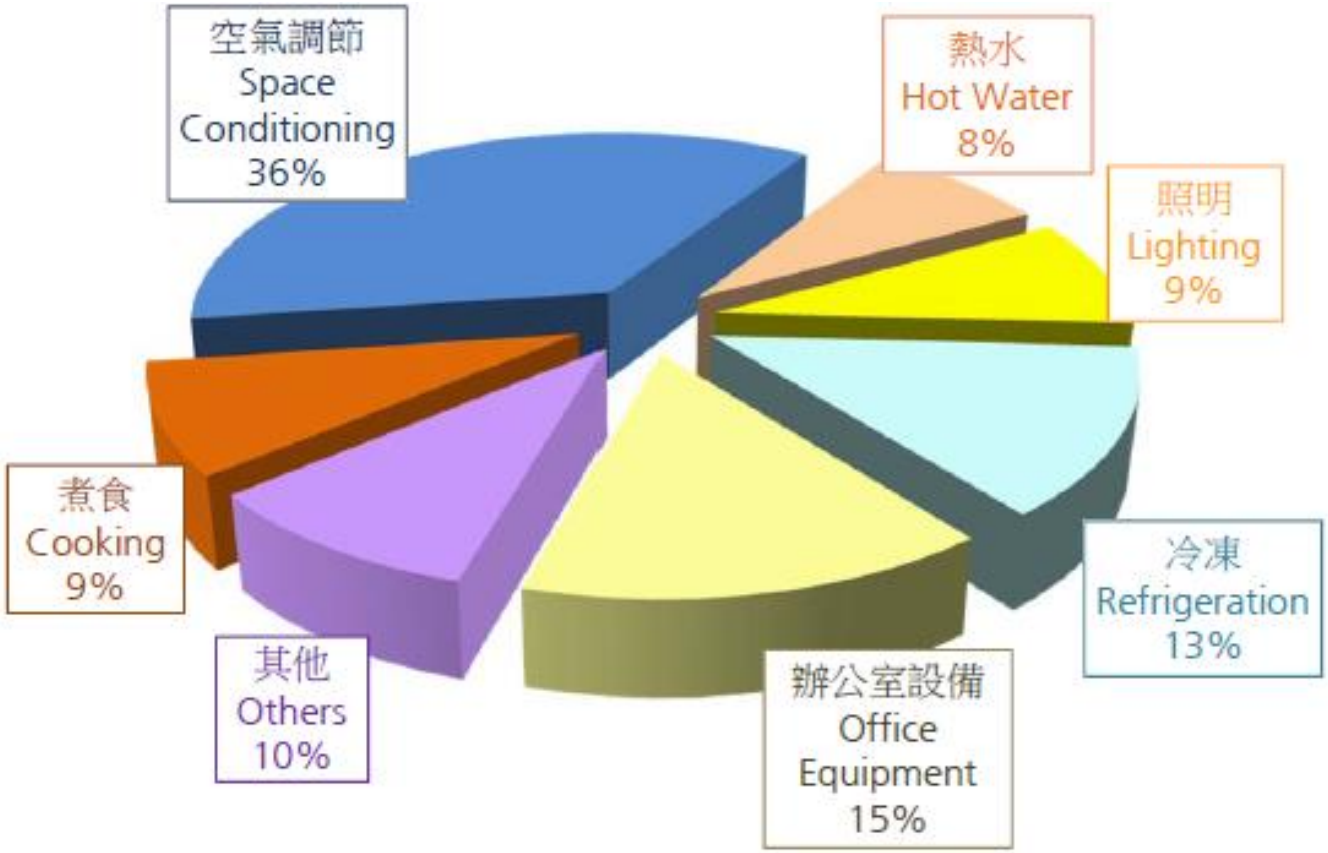
The energy system in Hong Kong

- Reliant on external sources. Electricity generation: coal (53%) nuclear power (23%); natural gas (22%)
- Monopoly electricity suppliers: Hong Kong Electric Company & China Light and Power
- Scheme of Control: standard rate of return; dictate consumer prices; no incentive to reduce energy demand
- General policy framework that highlights reliability, cost efficiency and public safety in the energy system
- Emerging climate/energy plans do not address energy poverty directly but directions to enhance resilience to e.g. heat

Patterns of energy consumption and expenditure

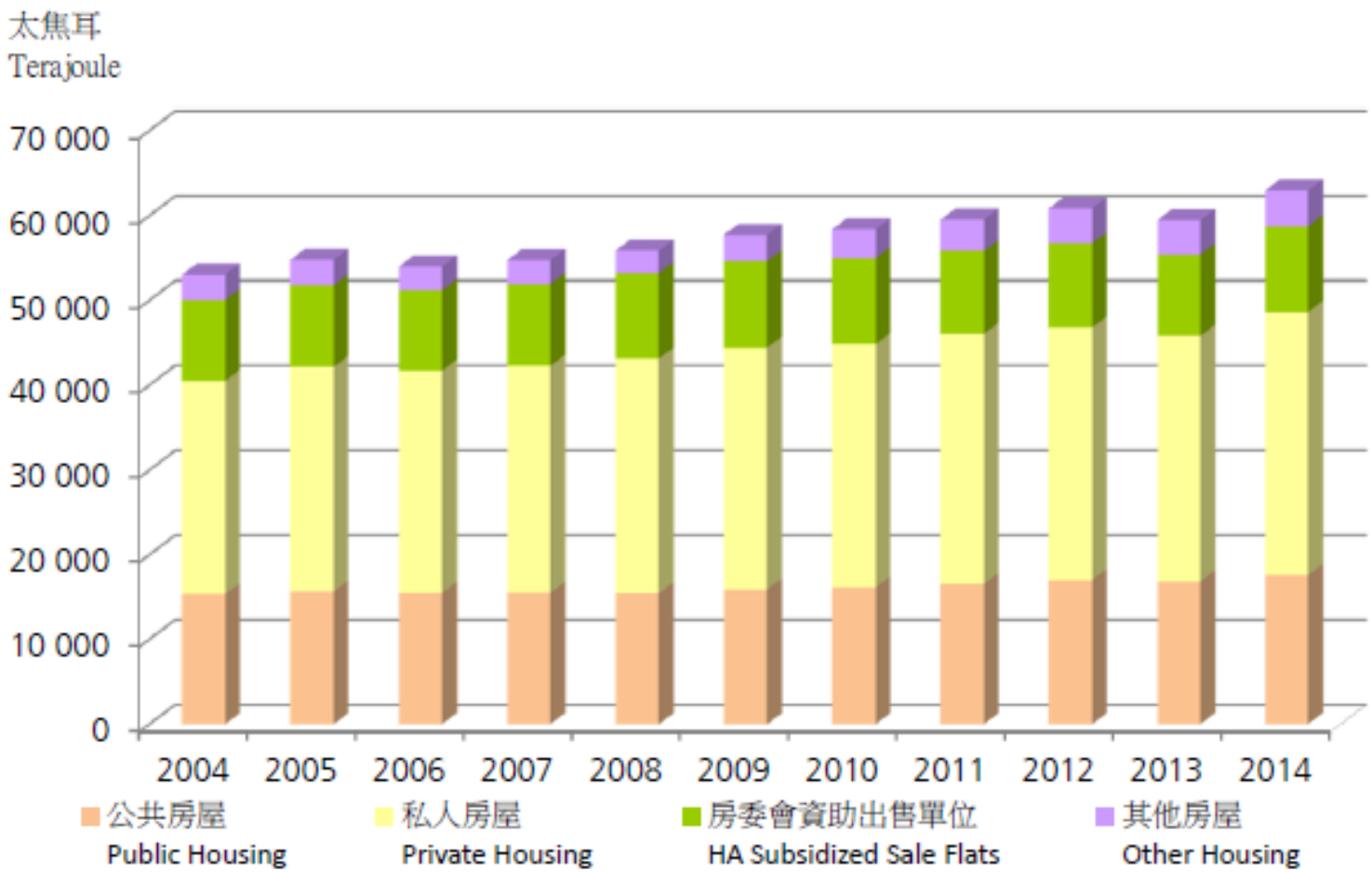
- 1940s/1950s: firewood, charcoal, coke and coal (30% of total consumption); displaced by oil
- 1980s: revert back to coal for electricity generation; increase in energy-related spending for electricity
- Electricity and towngas became predominant fuels in household sector (95.6% of total energy consumption)
- A stable trend of approximately 3% of household income spent on energy expenditures (household expenditure survey)

Residential energy use



EMSD (2016) Hong Kong Energy End-use Data 2016

Energy consumption by housing type



EMSD (2016) Hong Kong Energy End-use Data 2016

Evidence of energy poverty in Hong Kong

- To date: no formal, academic work conducted on energy poverty in Hong Kong
- However, recent NGO and media work provides some evidence

Picture source: World Green Organisation


Evidence to date
Vulnerable to tariff pressure and increases
Lack of affordability of more efficient appliances
Health problems (e.g. heat strokes, thermal discomfort) cultivate poor living conditions
Dim or poor lighting can create unsafe conditions
Shifting daily routines to avoid thermal discomfort
Lack of direct flat ownership (and associated lack of transparency) over meter and bill information
Landlords charge more than utilities (20-50%)

NGO action on energy poverty

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- Calculations that 210,000+ families living under the "energy poverty" line in subdivided units
- Campaign via energy poverty lab/micro film

Hong Kong Council of Social Services

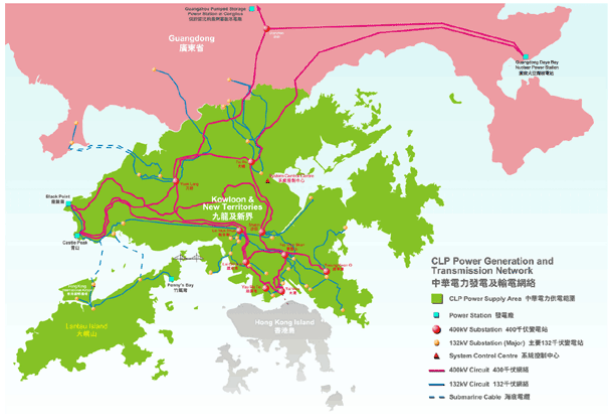
- Quantitative data; lowest 5% expenditure group spent approx. 8% on electricity, gas and water.
- Qualitative evidence: contributing factors such as lack of direct ownership, health issues and poverty.

Hong Kong Consumer Council

- Electricity tariff pressure and unaffordability
- Conflicting objectives of reducing tariffs for social reasons while setting tariffs that encourage electricity saving for environmental reasons.

Preliminary findings (I): Spatial

- Specificity of place *"In the UK you need to make sure the elderly get sufficient gas to heat their house… In the developing countries… they care about access to energy… Hong Kong it's in between. They've definitely got access to energy but because of the economic burden, they can hardly use the energy which is necessary"*
- Geographical distribution *"Hong Kong Island, the land price is much higher than Kowloon…more reasons for developers to acquire old buildings… This process has driven away a lot of the needy families"*



Preliminary findings (II): Material

- Housing issue *"Closely related to housing problems… because energy, even for low income families [has] never been a really substantial household expense… housing expenses could easily eat up more than half of their income"*
- Private housing and sub-divided flats *"They have to live in this small cube… they don't have their independent electricity bill. So there may be a rip off by the landlord overcharging them instead of the meter tariff enjoyed by most people"*

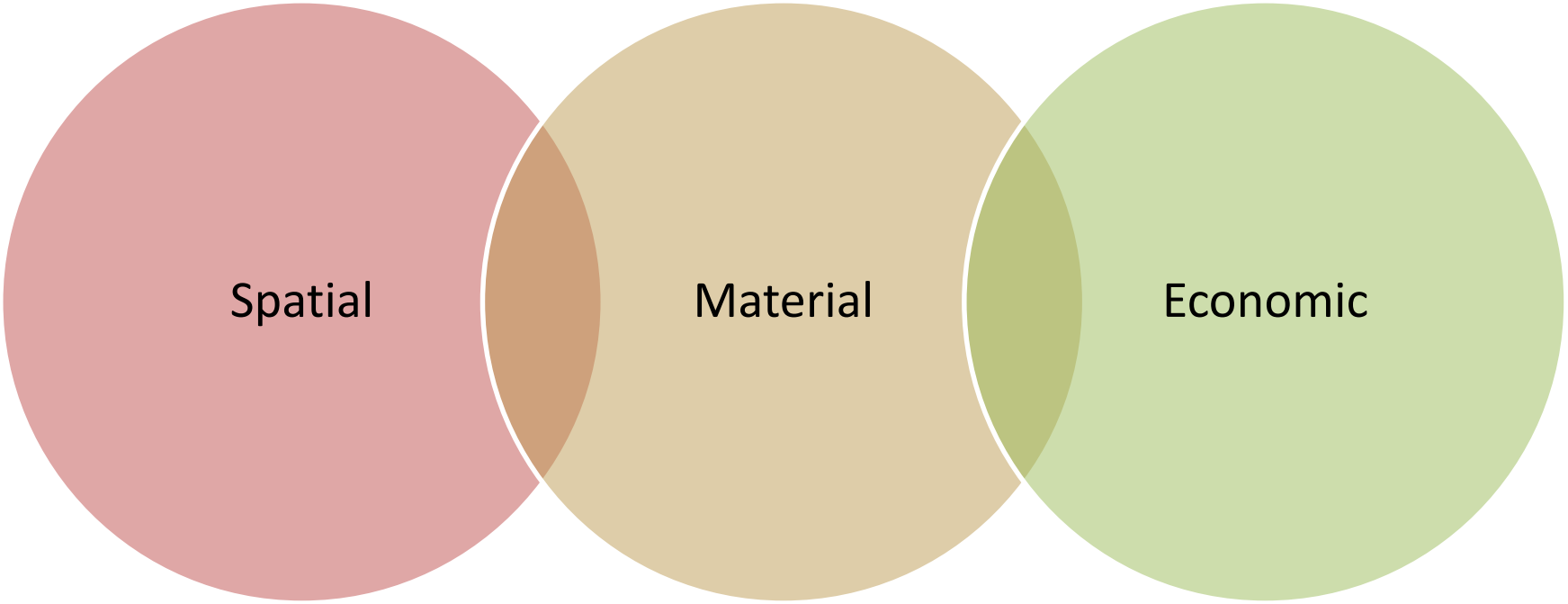
Preliminary findings (III): Economic

- Income expenditure: *"the UK example is if you spend more than 10 per cent of your income. Some of the partition homes, definitely they will spend more than 10 per cent due to their low income. If you look at the Hong Kong census, you also see it could be up to eight per cent for energy, water, gas for the lowest income group"*

- Energy economics *"Those who are below household income of $12,500 will be much more hit by the clean energy or the new fuel mix cost increase. Now obviously, that depends on the fuel cost in the international market"*

Conclusions and future research directions

Conclusions: dynamics of energy poverty in Hong Kong



Future research directions

- To understand the lived experience of energy vulnerability in the context of (a) Hong Kong and (b) urban Asia-Pacific
- To understand energy markets and production alongside energy consumption in driving energy poverty
- To interrogate the wider equity issues associated with energy transitions and a sustainable/renewable energy system in the Asia Pacific
- To consider the trends and synergies in energy and equity across the (urban) Asia Pacific region

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Thank you! Questions?

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