The Global Commission on the Economy and Climate

New Climate Economy
15th April 2014
The New Climate Economy project aims to identify the biggest opportunities to strengthen both growth and climate performance.

The focus is:

Disruptive, Transformational plays that meet 3 primary conditions:

- Have large impact
- Are adaptive and evolutionary
- Drive change through competition rather than relying on cooperation

The approach is:

Evidence-based, helping policy-makers, business leaders and investors do their job better-informed

Decision-maker focused, providing real world recommendations on trade-offs

Objective, assessing the evidence on all sides

Open, inviting input and submissions from all sides

Near-term, focusing on the next 5-10 years
The global New Climate Economy Partnership

<table>
<thead>
<tr>
<th>Global Commission</th>
<th>Economic Advisory Panel</th>
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<tbody>
<tr>
<td>21 global leaders, chaired by former President of Mexico Felipe Calderón</td>
<td>14 world leading economists, chaired by Professor Lord Nicholas Stern</td>
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<td>Includes:</td>
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<td>S. (Kris) Gopalakrishnan</td>
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<td>Isher Judge Ahluwalia</td>
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<td>Two Nobel prize winners: Daniel Kahneman and Michael Spence</td>
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<th>7 Commissioning Countries</th>
<th>8 Partner Research Institutes</th>
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<tr>
<td>Colombia</td>
<td>Climate Policy Initiative (USA)</td>
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<tr>
<td>Ethiopia</td>
<td>Ethiopian Development and Research Institute</td>
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<td>Indonesia</td>
<td><strong>Indian Centre for Research on Economic Relations</strong></td>
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<td>Norway</td>
<td>Global Green Growth Institute (South Korea)</td>
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<td>Sweden</td>
<td>London School of Economics (UK)</td>
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<td>South Korea</td>
<td>Stockholm Environment Institute (Sweden)</td>
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<td>United Kingdom</td>
<td>Tsinghua University (China)</td>
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<td>World Resource Institute (USA)</td>
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Well planned, compact cities are more economically efficient and have lower emissions

SOURCE: (1) LSE Cities; (2) Newman and Kenworthy 1989
Waste in fuel, cars, and roads remains

An American road reaches peak throughput only 5% of the time...
...and even then, it is only 10% covered with cars

The typical American car spends 96% of its time parked

Energy flow through a combustion engine

- Move the person
- Inertia
- Aerodynamics
- Rolling resistance
- Auxiliary power
- Transmission

Idling

Engine losses

2.6% driving
0.8% looking for parking
0.5% sitting in congestion
Tesla motors is driving competition across the global auto industry, and creating huge wealth in the process.

Tesla market cap: $30bn
25,000 cars sold in 2013

GM market cap: $55.8bn
9.7 million cars sold in 2013

"All the geniuses here at General Motors kept saying lithium-ion technology is 10 years away, and Toyota agreed with us – and boom, along comes Tesla. So I said, 'How come some tiny little California startup, run by guys who know nothing about the car business, can do this, and we can't?' That was the crowbar that helped break up the log jam."
Four disruptive technologies in transportation

### Electric Vehicles

- Total ICEV stock: Current
- Total PHEV stock: Current
- Total BEV stock: Current
- Total FCEV stock: Current

### Vehicle Charging Infrastructure

#### Cost of 3 Different EVSE in 2008 Dollars

- AeroVironment EVSE RS
- GE WattStation
- Schneider EV Link

### Car Sharing

- 22 mpg to 33 mpg
- CarSharing cars are more fuel efficient
- 874,084 grams CO₂ saved per person
- 15,000 miles to 8400 miles
- Carsharers drive 44% less

### Autonomous Vehicles

<table>
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<th>Adoption Scenario</th>
<th>Economic Benefits</th>
<th>Avoided Carbon Emissions</th>
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<tbody>
<tr>
<td>50%</td>
<td>$97.5 B</td>
<td>1,998,080</td>
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<tr>
<td>90%</td>
<td>$189.0 B</td>
<td>6,458,080</td>
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Benefits: Fuel Efficiency, Crash Savings, Congestion Reduction (Highway and Arterial), Parking Savings
Air pollution exposure caused ~7 million deaths worldwide in 2012, particularly in the East and South Asia.

**Sources of air pollution in Europe**

- Energy (Fuels): 42%
- Transport: 18%
- Agriculture: 11%
- Industrial processes: 2%
- Others: 2%

**Deaths attributed to air pollution in 2012**

- East Asia and Pacific: 2,885
- South and South east Asia: 2,275
- Africa: 679
- Europe: 582
- Middle East and Eastern Mediterranean: 394
- Americas: 227

**Costs of air pollution in selected countries, % of GDP**

- China: 4
- India: 3
- USA: 1

1 Includes deaths attributed to ambient and household air pollution. China is included in the East Asia and Pacific region, India is included in South and South-east Asia.

**SOURCE:** Deaths from World Health Organisation, Costs from World Bank and IMF, sources of pollution from European Environment Agency
India is a critical piece of this story

Potential questions linked to global narrative:

1. Transforming the Indian real economy will require choices on nature and scale of change eg. patterns of urbanisation.

2. India may want to follow the approach taken by other countries of growing first and cleaning up later but is this in its own self-interest?

3. What are key decisions in the next 5-10 years which will shape India’s future in the next 25 years?