The EIU: Supporting a Clean & Resilient Recovery

The role of energy efficiency and cooling
COVID-19 has cut economic growth and emissions but it has far from solved the climate crisis

The EIU forecasts that global output will contract by 4.8% this year.

Global CO² emissions are expected to be about 8% lower in 2020 than in 2019.

But global greenhouse gas emissions would have to fall by 7.6% every year from 2020 to 2030 to keep temperature increases to less than 1.5°C.

*Source: EIU*

*Source: IEA*

*Source: UNEP*
Economic crises present an opportunity for governments to take action on climate

1. Mass unemployment
2. Lower political cost
3. Lower financial cost
Similar pleas were made in 2008, but by the end of 2010, annual emissions were greater than they had ever been.
Today though is different to 2009

The cost of renewables has fallen

Political and consumer sentiment is favourable to a green recovery

The need to address the climate crisis is even more urgent than before

**Falling costs: Solar photovoltaic**
Global weighted average LCOE prices, 2010-2019 USD/kWh

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</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>0.4</td>
<td>0.35</td>
<td>0.3</td>
<td>0.25</td>
<td>0.2</td>
<td>0.15</td>
<td>0.1</td>
<td>0.05</td>
<td>0.03</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Fossil fuel cost range

**Support for a 'green' economic recovery**
% who agree that government actions should prioritize climate change

<table>
<thead>
<tr>
<th>Country</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>65</td>
</tr>
<tr>
<td>India</td>
<td>81</td>
</tr>
<tr>
<td>Mexico</td>
<td>80</td>
</tr>
<tr>
<td>China</td>
<td>80</td>
</tr>
<tr>
<td>Brazil</td>
<td>66</td>
</tr>
<tr>
<td>Japan</td>
<td>64</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>58</td>
</tr>
<tr>
<td>United States</td>
<td>57</td>
</tr>
</tbody>
</table>

Source: IRENA, Ipsos MORI

Example: Cooling, Income growth, Urbanisation, Heatwaves
There is a host of opportunities for policymakers to consider when designing green recovery packages.

### Sector-specific opportunities

**Including:**
- Power sector and its end users:
  - Transport
  - Buildings
  - Industry

### Cross-sector opportunities

**Including:**
- Infrastructure
- Energy efficiency
- Innovation
- Education

### Different methods of implementation

**Funding**
- a) Incentivise markets
- b) Support financing
- c) Provide directly

**Regulation**
To ensure maximum economic growth, policymakers must assess options against 4 key criteria:

- **Climate benefit**
- **Job creation**
- **Multiplier effect**
- **Time to impact on the economy**
- **Ability to implement**
### Which policies are the most successful for the climate?

Outside of global treaties, energy production and China’s one-child policy, energy efficiency has the largest scope to reduce emissions.

#### Emission reductions by policies/actions, bn tonnes CO₂ equivalent

<table>
<thead>
<tr>
<th>Category</th>
<th>Cumulative emissions</th>
<th>Period</th>
<th>Annual emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montreal protocol</td>
<td>135.0bn</td>
<td>1989-2013</td>
<td>5.6bn</td>
</tr>
<tr>
<td>Hydropower worldwide</td>
<td>2.8bn</td>
<td>2010</td>
<td>2.8bn</td>
</tr>
<tr>
<td>Nuclear power worldwide</td>
<td>2.2bn</td>
<td>2010</td>
<td>2.2bn</td>
</tr>
<tr>
<td>China one-child policy</td>
<td>1.3bn</td>
<td>2005</td>
<td>1.3bn</td>
</tr>
<tr>
<td>Other renewables worldwide</td>
<td>600m</td>
<td>2010</td>
<td>600m</td>
</tr>
<tr>
<td>US vehicle emissions &amp; fuel economy standards†</td>
<td>6.0bn</td>
<td>2012-25</td>
<td>460m</td>
</tr>
<tr>
<td>Brazil forest preservation</td>
<td>3.2bn</td>
<td>2005-13</td>
<td>400m</td>
</tr>
<tr>
<td>India land-use change</td>
<td>177m</td>
<td>2007</td>
<td>177m</td>
</tr>
<tr>
<td>Clean Development Mechanism</td>
<td>1.5bn</td>
<td>2004-14</td>
<td>150m</td>
</tr>
<tr>
<td>US building &amp; applications codes</td>
<td>3.0bn</td>
<td>2008-30</td>
<td>136m</td>
</tr>
<tr>
<td>China SOE efficiency targets</td>
<td>1.9bn</td>
<td>2005-20</td>
<td>126m</td>
</tr>
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</table>

#### Cumulative emissions

<table>
<thead>
<tr>
<th>Category</th>
<th>Cumulative emissions</th>
<th>Period</th>
<th>Annual emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collapse of USSR</td>
<td>709m</td>
<td>1992-98</td>
<td>118m</td>
</tr>
<tr>
<td>Global Environment Facility</td>
<td>2.3bn</td>
<td>1991-2014</td>
<td>100m</td>
</tr>
<tr>
<td>EU energy efficiency</td>
<td>230m</td>
<td>2008-12</td>
<td>58m</td>
</tr>
<tr>
<td>US vehicle emissions &amp; fuel economy standards†</td>
<td>270m</td>
<td>2001-18</td>
<td>54m</td>
</tr>
<tr>
<td>EU renewables</td>
<td>117m</td>
<td>2008-12</td>
<td>29m</td>
</tr>
<tr>
<td>US building codes (2013)</td>
<td>230m</td>
<td>2014-30</td>
<td>10m</td>
</tr>
<tr>
<td>US appliances (2013)</td>
<td>158m</td>
<td>2014-30</td>
<td>10m</td>
</tr>
<tr>
<td>Clean technology fund</td>
<td>1.7bn</td>
<td>project lifetime</td>
<td>na</td>
</tr>
<tr>
<td>EU vehicle emissions standards</td>
<td>140m</td>
<td>2020</td>
<td>na</td>
</tr>
</tbody>
</table>

* Annual emissions are cumulative emissions divided by the relevant period. The estimate for the current emissions avoided under the Montreal protocol is eight billion tonnes of CO₂e. The annual figure for the collapse of the USSR refers to the years 1992-98.† Cars and light trucks. ‡ Heavy trucks

*Source: The Economist 2014*
How does energy efficiency compare against our criteria?

Policies on energy efficiency could look to:

- Improve industrial energy efficiency
- Retrofit buildings and commission new efficient constructions
- Roll out more efficient and connected household appliances – including smart systems

Assessment against key criteria:

0. Climate benefit
1. Job creation
2. Multiplier effect
3. Time to impact the economy
4. Ability to implement
Investment in energy efficiency creates more jobs than fossil fuels and has a multiplier effect of around 2

1. **Job creation**

   **Spend and multiply**
   
   Job creation (direct and indirect) for every $10 million in spending

   - **Energy efficiency**: 77 jobs
   - **Fossil fuel**: 27 jobs

2. **Multiplier effect**

<table>
<thead>
<tr>
<th>Stimulus measure</th>
<th>Gross-value-added multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve industrial energy efficiency</td>
<td>2.1</td>
</tr>
<tr>
<td>Retrofit houses for energy efficiency</td>
<td>2.2</td>
</tr>
<tr>
<td>Install smart-building systems</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Source: McKinsey & Company

Sources: Heidi Garrett-Peltier

Program details subject to change following editorial review. © The Economist Group 2020.
Energy efficiency projects can be rolled out quickly and are relatively feasible to implement

- Improve industrial energy efficiency
- Retrofit buildings and commission new efficient constructions
- Roll out more efficient and connected household appliances – including smart systems

Source: IEA
How does efficient, climate-friendly cooling compare against our criteria?

Policies on cooling could include:

• Equipment replacement in industrial processes
• Retrofits to incorporate cooling and introduce passive technologies
• Rolling out more efficient and connected cooling appliances, including smart systems
• Green shading

0. More efficient ACs cut CO2 emissions from space cooling in half by 2050.

1. Limited data on labour intensity.

2. Multiplier estimated similar to energy efficiency.

3. Expect time to impact on the economy to be similar to energy efficiency.

4. Training required for some policies but lower requirements for others.
Have stimulus packages launched to date included opportunities for energy efficiency and cooling?

A review by The EIU of over 350 national stimulus packages found that:

- 87% were short-term rescue packages over longer-term recovery strategies.

- No policies to date encourage cooling but nearly 7% could encourage energy efficiency depending on how they are rolled out.

Example: Denmark - On May 19, an agreement was reached on green renovation of public housing (DKK 30.2 billion or 1.3 percent of 2019 GDP) during the period 2021-26.

- It is not too late. As countries release longer term recovery strategies, these can include energy efficiency opportunities.

Please note this research is in progress and is subject to change.
It is time to take action

1. Crises create a unique opportunity to steer the economy away from carbon.
2. Policymakers should prioritise climate-friendly investments that meet necessary economic criteria.
3. Energy efficiency and cooling score highly against these criteria and should be high on policymakers’ priority lists.
4. While stimulus packages to date have not incorporated these opportunities, they still can and must in order to benefit both the climate and the economy.
Thank you!

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