

## Global Letter Climate change action may proceed faster than thought



*While post-COP-26 policy has been slow, the corporate level response may surprise on the upside*

It is hard not to conclude that, while at COP-26 most governments committed themselves to targets, the pace of subsequent policy action has been glacial.<sup>1</sup> It may be wrong however to draw a particularly pessimistic conclusion from this.

### Encouraging elements

While it is difficult to measure sentiment, it is evident that, en masse, social and political attitudes regarding the importance of nature and reducing greenhouse gas emissions had shifted by the time of COP-26. Equally, there is an increasing perception, at least amongst the companies with whom we converse, that decarbonising can be as much about opportunities for new, more efficient, and better innovations as it is about increased carbon and energy costs.

Moreover, commercial pressure stands to reinforce this view. As progressively more firms realise that ultimately they are going to be obliged, both by policy and by the threat posed by new technologies and processes outcompeting their own, to reduce their emissions, increasingly more of them will try to get out in front.

As they do so, three powerful factors – learning by doing; economies of scale; and combinatorial technologies<sup>2</sup> – will not only increase the competitiveness of the firms that act first; they will also generate a reinforcing macroeconomic virtuous circle of innovation, investment, and falling costs.<sup>3</sup>

### Macroeconomic reinforcement

For example in 2008,<sup>4</sup> solar power cost between five and ten times as much as coal and gas electricity; and offshore wind power was still prohibitively expensive.<sup>5</sup> Since then, however, the cost of wind has fallen by more than half,<sup>6</sup> while solar PV costs have declined by more than 90%. The cost of lithium-ion batteries has fallen nine-fold.<sup>7</sup> Today, both solar and wind are cost competitive relative to hydrocarbons even when accounting for the need to cover for intermittency.

In time, even the capital costs of clean technologies are likely to outcompete those of fossil fuels. A solar panel has fewer bulky components per unit of energy generated than does a coal plant and, as they become more productive, capex costs will outcompete gas. There are far fewer moving parts in electric vehicles than in an internal combustion-powered vehicle. Motorists are set to benefit not only from lower running costs of EVs,<sup>8</sup> but lower purchase prices too.<sup>9</sup>

Most analysts have long underestimated the scale of deployment in renewables. The International Energy Agency (IEA) is one case in point amongst many.<sup>10</sup> Since 2010, for example, annual investment in solar has grown by a factor of 20, and for wind by a factor of 4. Correspondingly, and like almost everyone else, the IEA underestimated how fast costs would fall. Yet, as it now notes, solar power offers the “*cheapest electricity in history*”.<sup>11</sup> It also predicts that “renewables will overtake coal<sup>12</sup> to become the largest source of electricity generation worldwide in 2025”.<sup>13</sup>

### Conclusion

None of this is certain. And none of this is to say that policy is unimportant. Indeed the returns to early policy action to steer economies in a low carbon direction, and head off investment in high carbon assets that would otherwise likely become devalued and ‘stranded’, stand to be more significant than previously expected.

Rather, the point is that it is possible – we would say probable – that the process of reducing carbon emissions will proceed faster than might be inferred from the current slow progress of policy. The clean innovation machine, now that it is switched on and is running,<sup>14</sup> has the potential, largely by itself, to become more innovative and productive than the conventional alternative.<sup>15</sup>

If that is so, then there are two basic conclusions:

- **For firms:** don’t wait.
- **For investors:** changes in relative prices and thereby firms’ valuations may happen quicker, perhaps markedly so, than many currently expect.<sup>16</sup> ■

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## Endnotes

- <sup>1</sup> A prime concern, not least amongst economists, is that dealing with the 'externalities' requires that they be priced – the 'Polluter pays' principle – or regulated, or that alternatives be subsidised. And governments are finding it politically extremely difficult to do this.
- <sup>2</sup> Combinatorial policies and network effects can be extremely important. Without any one of the technologies in question individually necessarily being new, they may be combined in new or novel ways. The classic example is the iPhone: while all of its technologies were comparatively well known, they were combined in such a way that the resulting new product swept the world. iPhone began a bandwagon effect that revolutionised mobile communications. The more people with smart phones, the more developers created clever apps to work with them, the more people wanted to own a smartphone ... and so on. The importance of combinatorial technology as a phenomenon was first drawn to our attention by Ben Combes.
- <sup>3</sup> See [Productivity opportunities and risks in a transformative, low-carbon and digital age | The Productivity Institute](#)
- <sup>4</sup> The date was chosen largely for symbolic value: 2008 was the year when an early mover in this field, the UK, passed its [Climate Change Act](#).
- <sup>5</sup> See [The New Economics of Innovation and... | Oxford Martin School](#)
- <sup>6</sup> See [Policy-innovation-offshore-wind-report-2020.pdf \(storage.googleapis.com\)](#)
- <sup>7</sup> See [Assessing the progress toward lower priced long range battery electric vehicles \(repec.org\)](#)
- <sup>8</sup> See [Don't Fall For The Myth That Internal Combustion Cars Are Greener Than Batteries Over Their Life - They're Not \(forbes.com\)](#)
- <sup>9</sup> See [Net emission reductions from electric cars and heat pumps in 59 world regions over time \(nih.gov\)](#)
- <sup>10</sup> See [The International Energy Agency consistently underestimates wind and solar power. Why? - Vox](#)
- <sup>11</sup> See [Renewables Were The World's Cheapest Energy Source in 2020 | World Economic Forum \(weforum.org\)](#)
- <sup>12</sup> See [Renewables 2020 – Analysis - IEA](#)
- <sup>13</sup> In singling out the IEA, we do not seek to denigrate the organisation. The reverse, in fact: we chose it as it is likely the most expert and informed outfit to make such projections. Rather, we are drawing attention to the Dornbusch phenomenon that, in economics and markets, *"Things take longer to happen than you expect; and then happen faster than you thought possible."*
- <sup>14</sup> For more on what is to be understood by 'the clean innovation machine', see [The Environment and Directed Technical Change - American Economic Association \(aeaweb.org\)](#)
- <sup>15</sup> The real challenge for policymakers stems not from whether renewables are affordable, but from how to anticipate and manage the disruption and distributional consequences associated with rapid change. Changing perceptions of risk and opportunity will be a key part of overcoming those political economy barriers. As the advantages of the great digital and low-carbon re-wiring of the economy become apparent, the ability to overcome resistance and inertia stands (in our judgment) to increase. This constitutes the final, but perhaps most important, self reinforcing feedback associated with a rapid structural transition to a clean economy.
- <sup>16</sup> See [A new perspective on decarbonising the global energy system \(ox.ac.uk\)](#)

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