

# What investors need to know about clean technology

Four themes driving growth

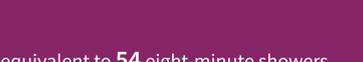
Consumers, governments and corporations are assessing their environmental practices, and developing new clean technologies, as the impact of climate change takes its toll on the planet.

We focus on four themes we believe are helping to drive the growth of clean technologies; responsible nutrition, sustainable transport, recycling and waste reduction and smart energy.

## 1 Responsible nutrition

Livestock farming uses approximately 80% of agricultural land<sup>1</sup> and, 70%<sup>2</sup> of global freshwater is used for growing food and raising animals.

As demand on the Earth's natural resources grow, how are our food choices impacting global water usage?<sup>3</sup>

Food	Litres of water required*	Equivalent to
Chicken 	7,134	equivalent to 109 eight-minute showers 
Avocados 	3,519	equivalent to 54 eight-minute showers 
Tofu 	587	equivalent to 9 eight-minute showers 

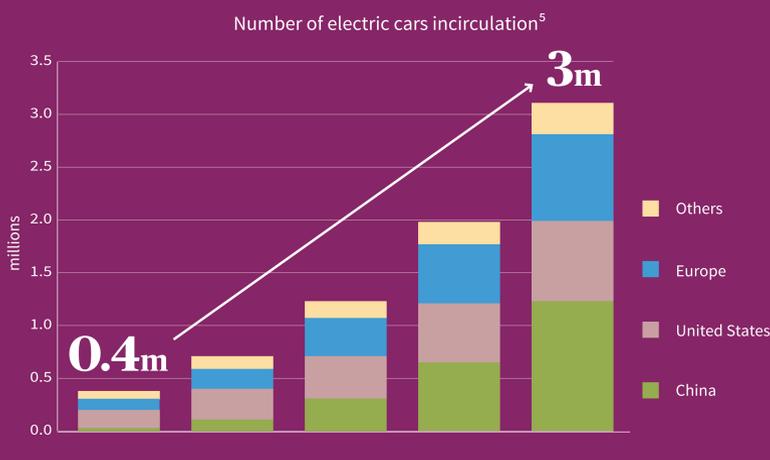
\*Based on consuming each product 1-2 times per week.

With the planets population growing by 200,000 each day<sup>4</sup>, more sustainable food production and agricultural technologies are being developed that could help prevent the depletion of the Earth's natural resources.

## 2 Sustainable transport

Electric vehicles (EV) are no longer the niche product they once were. Developments in technology, government intervention and a need to reduce carbon emissions have accelerated the growth in this market.

Electric car usage has grown steadily between 2013 – 2017



It is anticipated that global electric vehicles will grow at a rate of

**33%** by 2030<sup>6</sup>



The cost of lithium-ion batteries has fallen by

**35%** over the past year<sup>7</sup>

## 3 Recycling and waste reduction

Only 20%<sup>8</sup> of global electronic waste (e-waste) is currently recycled, and as access to technology has grown, so has the need to dispose of it responsibly.

In 2016, the approx. value of secondary raw materials in e-waste was €55bn<sup>8</sup>, and unless they are recycled responsibly, these materials will be lost to landfills

Potential value of aluminium, gold, and palladium in e-waste in 2016<sup>8</sup>

Aluminium : 3,585 Million € 	Gold : 18,840 Million € 
Palladium : 3,369 Million € 	

New technologies are being developed that could help reduce the amount of e-waste that is sent to landfills and recover secondary raw materials.

## 4 Smart energy

The smart grid is the next generation of energy distribution. Working as a two-way communication and utilising digital technology, the smart grid is designed to be more responsive to consumer demands than the existing electric grid, and can cater for growing renewable energies.

Smart grids encompass a range of technologies that could help revolutionise electricity networks



As smart grid technology grows, consumer reliance on traditional energy sources should fall and provide more opportunities for the growth of renewable energies.

## What's next for clean technology?

Clean technologies are developing at exponential rates and providing an array of potential investment and growth opportunities:

By 2022, renewable energy capacity globally should increase by

**43%<sup>9</sup>**

Between 2022 and 2027 the cultured meat market is anticipated to grow at CAGR of

**4%<sup>10</sup>**

Between 2019 and 2025 industrial smart meters are estimated to grow at a CAGR of

**20.1%<sup>11</sup>**

**“ Unsustainable human civilization on earth is now a reality. Awareness of this is steadily rising among governments, companies and consumers alike, creating opportunities for investors across the clean economy. ”**

Amanda O'Toole  
Clean Economy Strategy Manager

Sources:

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- (3) BBC News, 'Climate change food calculator: What's your diet's carbon footprint?', as at 13.12.2019. All figures for each food are global averages. <https://www.bbc.com/news/science-environment-46459714>
- (4) Worldometers, as at 03.07.2019, <https://www.worldometers.info/world-population/>
- (5) IEA, 'Global EV Outlook 2018', <https://www.iea.org/gevo2018/>
- (6) Deloitte, 'Plugging into the future'. Percentage based on compounded annual growth rate, as at 05.12.2019, <https://www2.deloitte.com/insights/us/en/industry/automotive/vehicle-electrification-global-automotive-industry.html>
- (7) Forbes, 'Batteries, Offshore Wind Lead Clean Energy Cost Cuts As Renewables Continue to Undercut Coal and Gas', as at 16.04.2018, <https://www.forbes.com/sites/mikescott/2019/04/16/batteries-offshore-wind-lead-clean-energy-cost-cuts-as-renewables-continue-to-undercut-coal-and-gas/#7c4d1d447d73>
- (8) 'The Global E-waste Monitor 2017', [https://collections.unu.edu/eserv/UNU:6341/Global-F-waste\\_Monitor\\_2017\\_electronic\\_single\\_pages.pdf](https://collections.unu.edu/eserv/UNU:6341/Global-F-waste_Monitor_2017_electronic_single_pages.pdf)
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- (11) Marketwatch, '20.1%+ Growth for Industrial Smart Meters Market size Insights to 2025', as at 12.03.2019, <https://www.marketwatch.com/press-release/201-growth-for-industrial-smart-meters-market-size-insights-to-2025-2019-03-12>

**We are beginning to see a shift to Clean Technology investing, as more companies embrace the circular economy and respond to the need for change.**

Visit our [webpage](#) to find out more about how our strategy is aiming to unlock the companies whose activities should contribute to the energy transition.