

Nanuk Asset Management



The Sustainability Revolution

Investment Opportunities and Risks

AIA Conference, August 2018

Nanuk's Investment Focus



*CLEAN
ENERGY*



*ENERGY
EFFICIENCY*



*INDUSTRIAL
EFFICIENCY*



WATER



FOOD



*WASTE/POLLUTION
CONTROL*



*HEALTHCARE
TECHNOLOGY*



*ADVANCED &
SUSTAINABLE
MATERIALS*

Nanuk Investment Universe - Examples



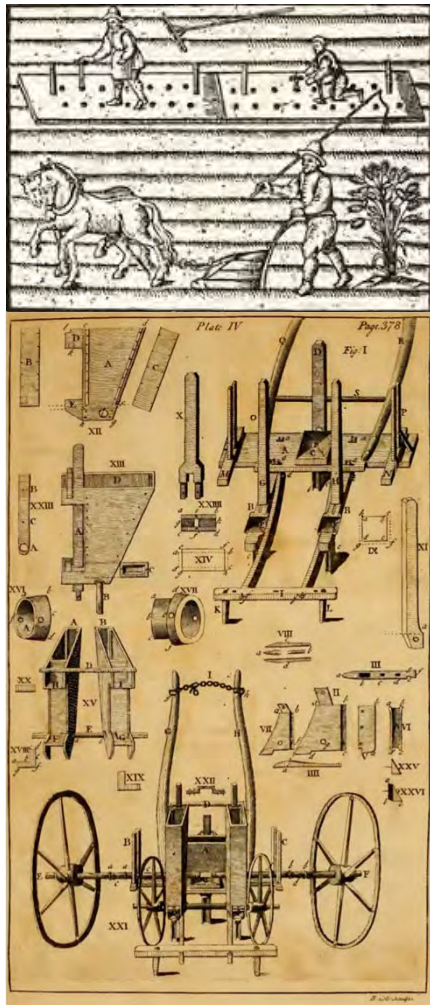
Predicting Disruptive Changes is Impossible

10 years ago there was no iPhone

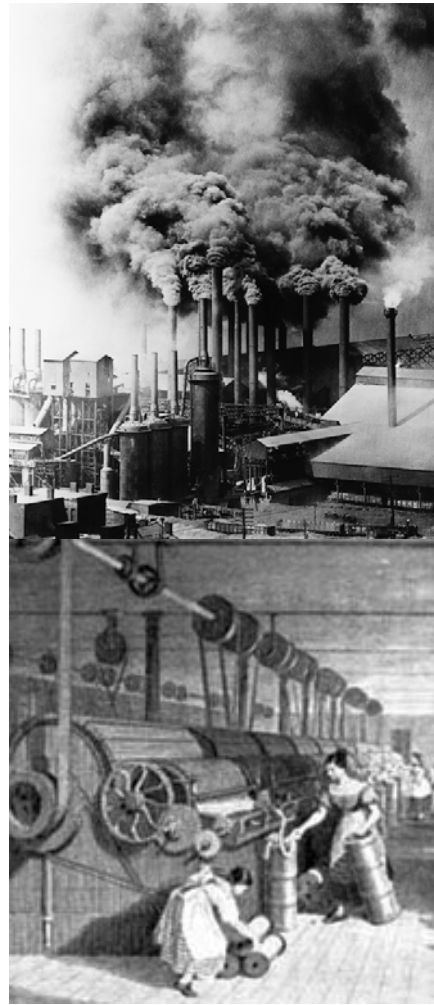


The Sustainability Revolution

Agricultural Revolution



Industrial Revolution



Digital Revolution



Sustainability Revolution



Sustainability: The Global Economy Must Change



Zooming ahead

China moves towards banning the internal combustion engine



Corporate Behaviour Driving Change

95
**65 OF THE WORLD'S MOST
INFLUENTIAL COMPANIES HAVE
JOINED RE100 AND COMMITTED
TO 100% RENEWABLE POWER.**

RE 100

BROUGHT TO YOU BY



IN PARTNERSHIP WITH

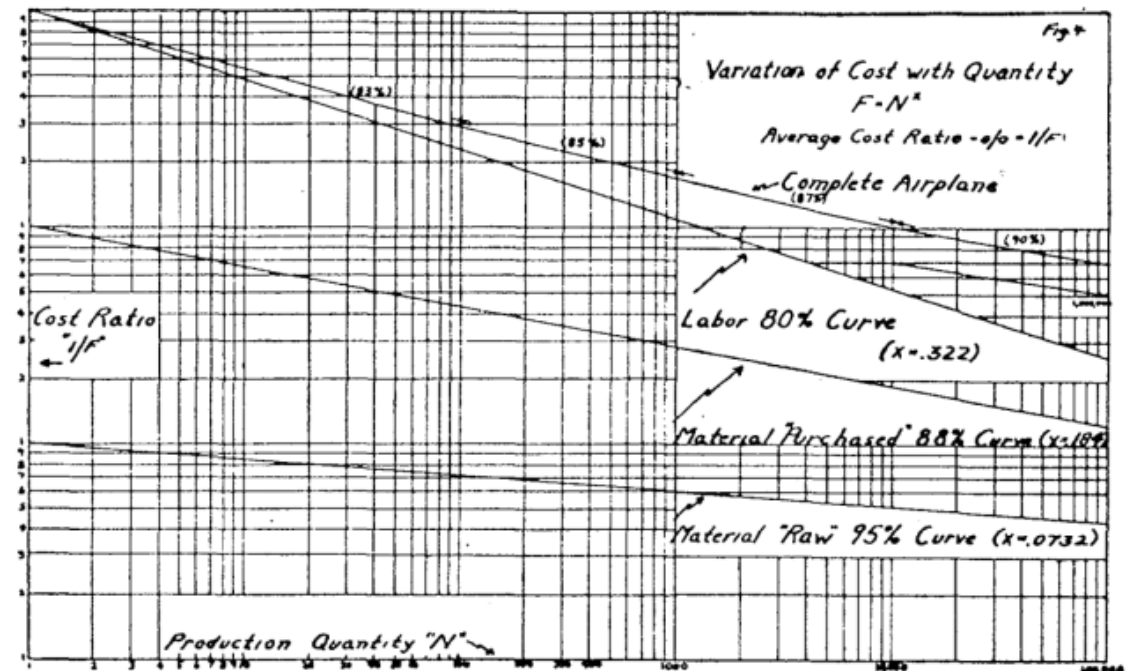
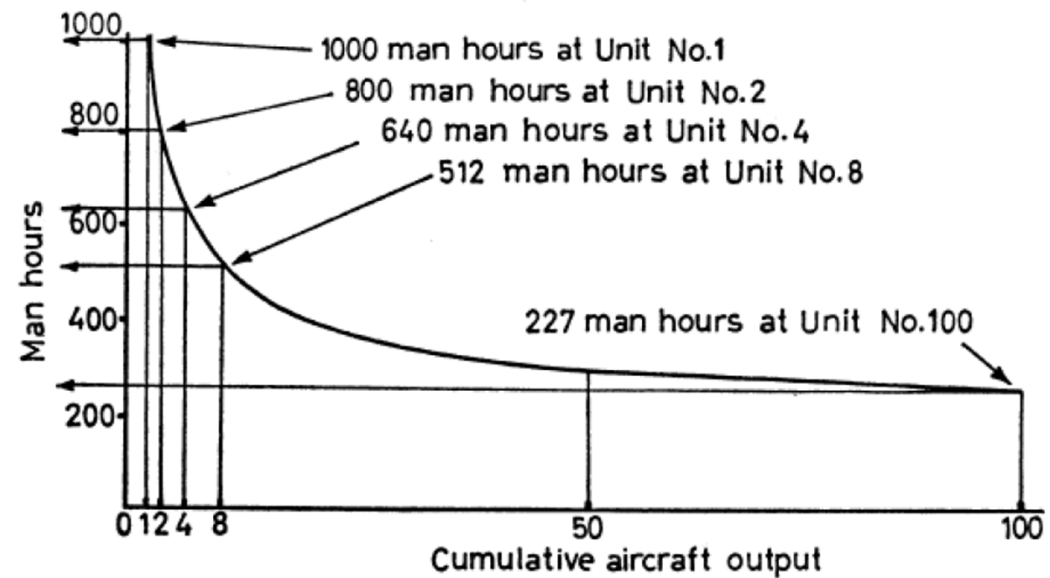


TheRE100.org

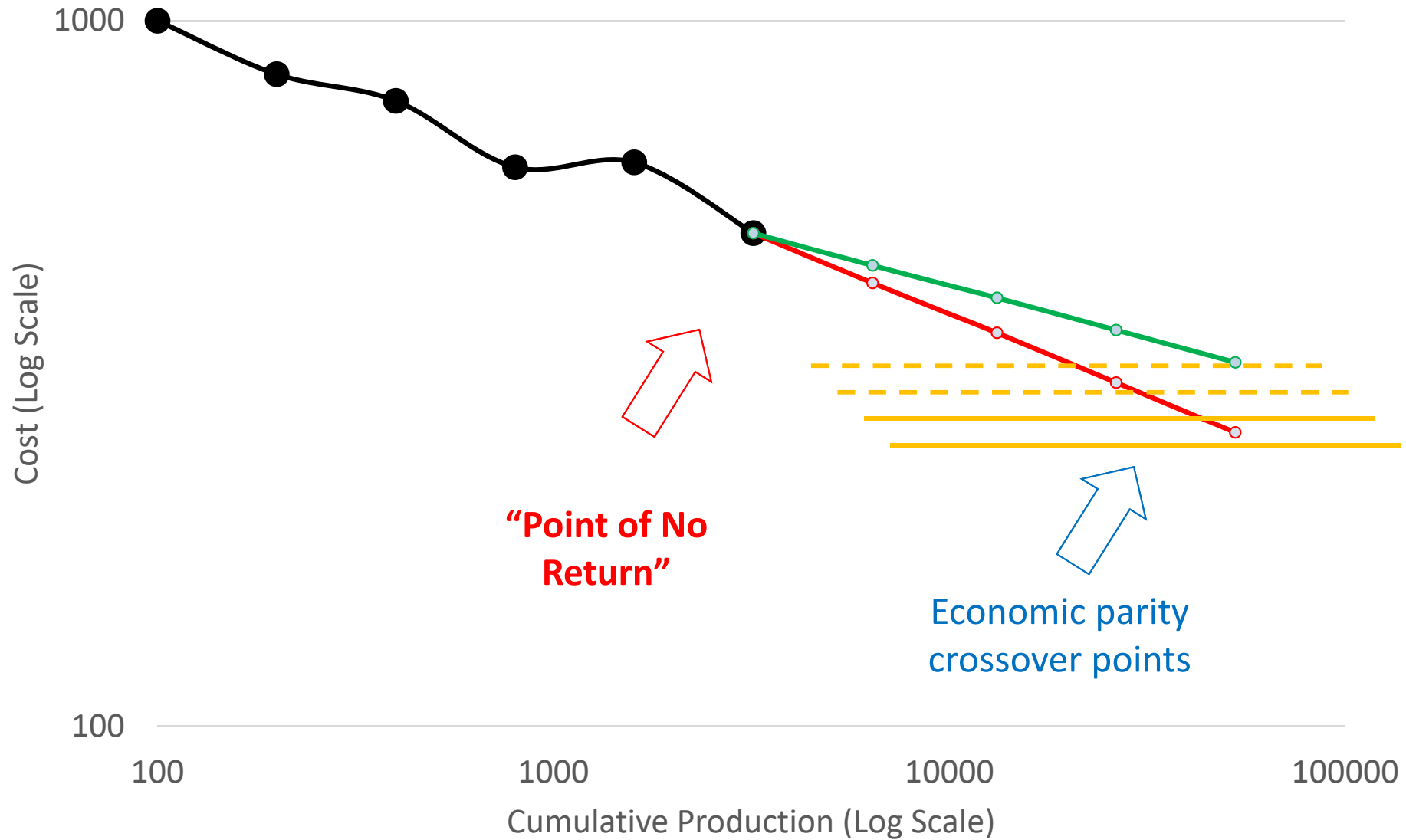




The Point of No Return – Experience Curve

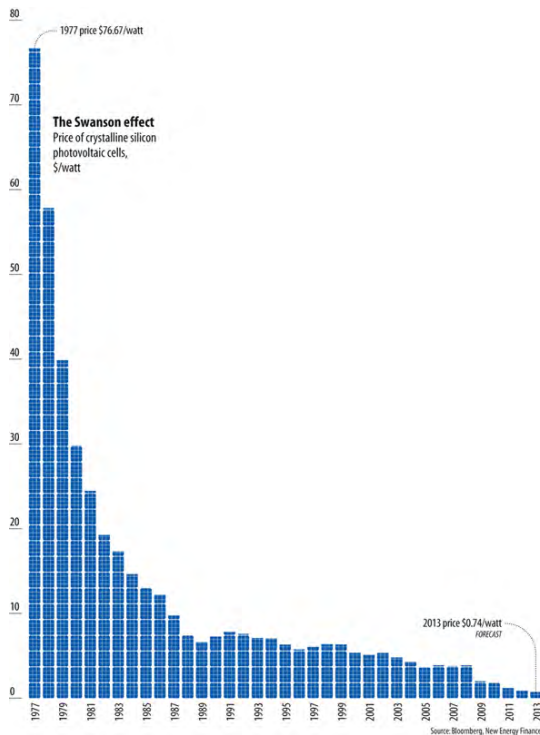


The Point of No Return

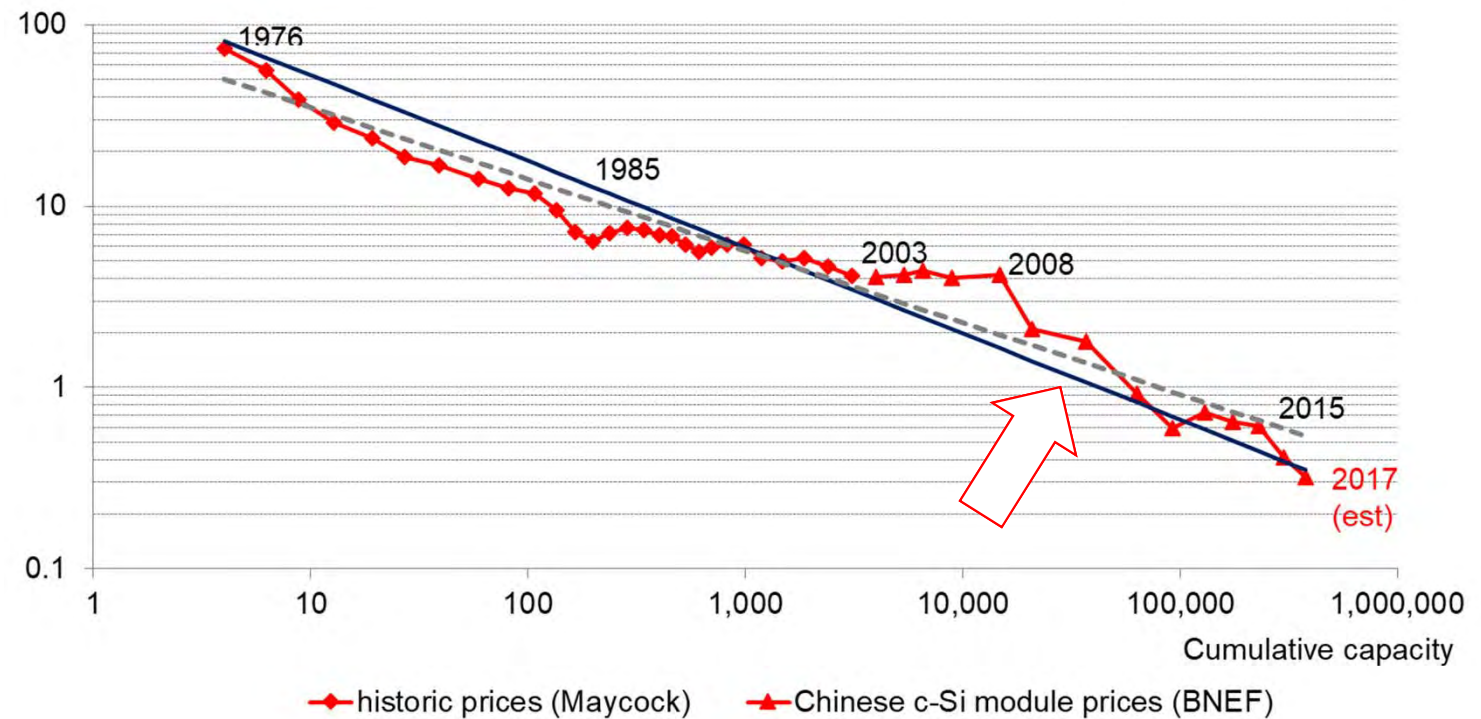


Cost of Solar PV Modules

Cost over time

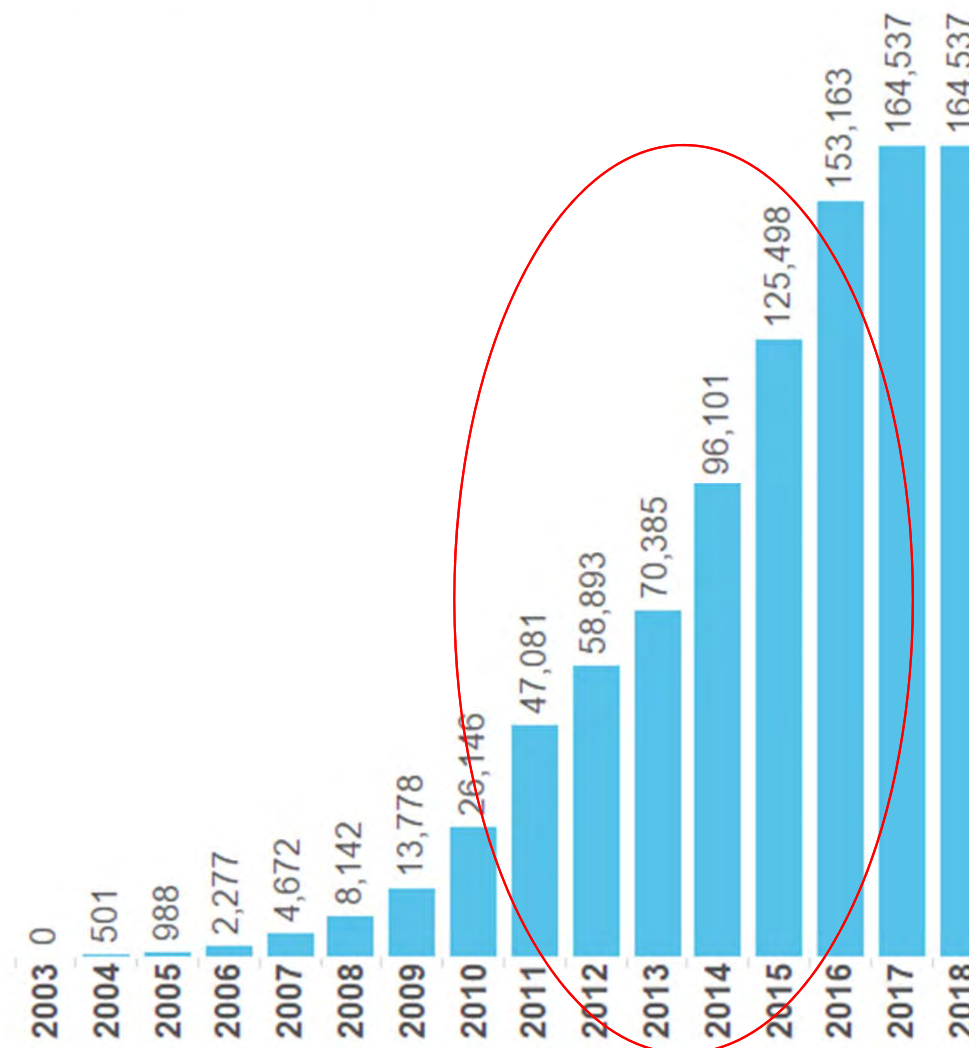


Cost vs cumulative production



Global Solar Production Capacity

Capacity Over Time - Crystalline silicon modules (MW/year)



Solar also dominates “distributed generation”



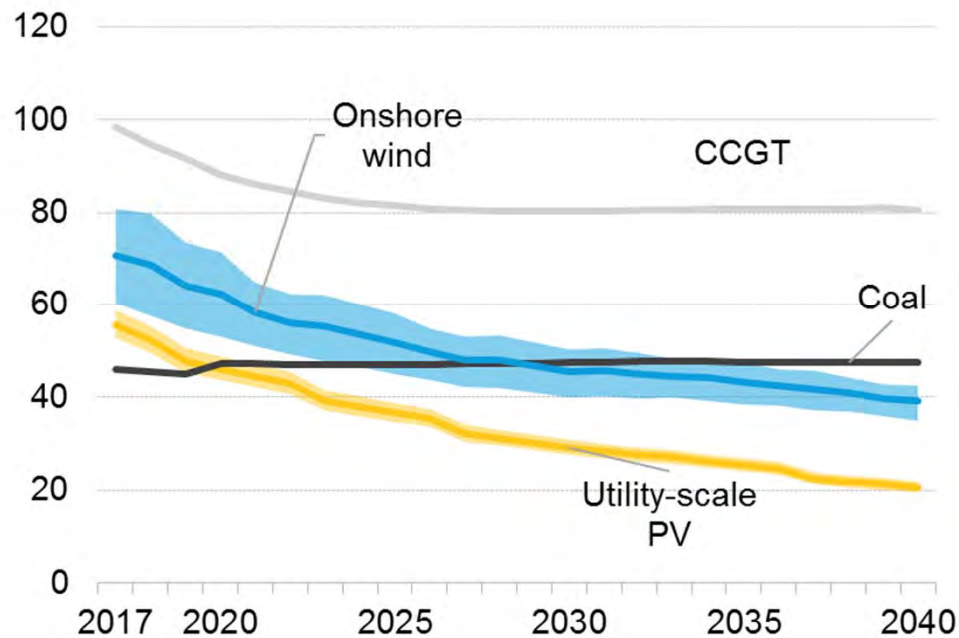
Disruption in Energy

Solar the cheapest source of new generation



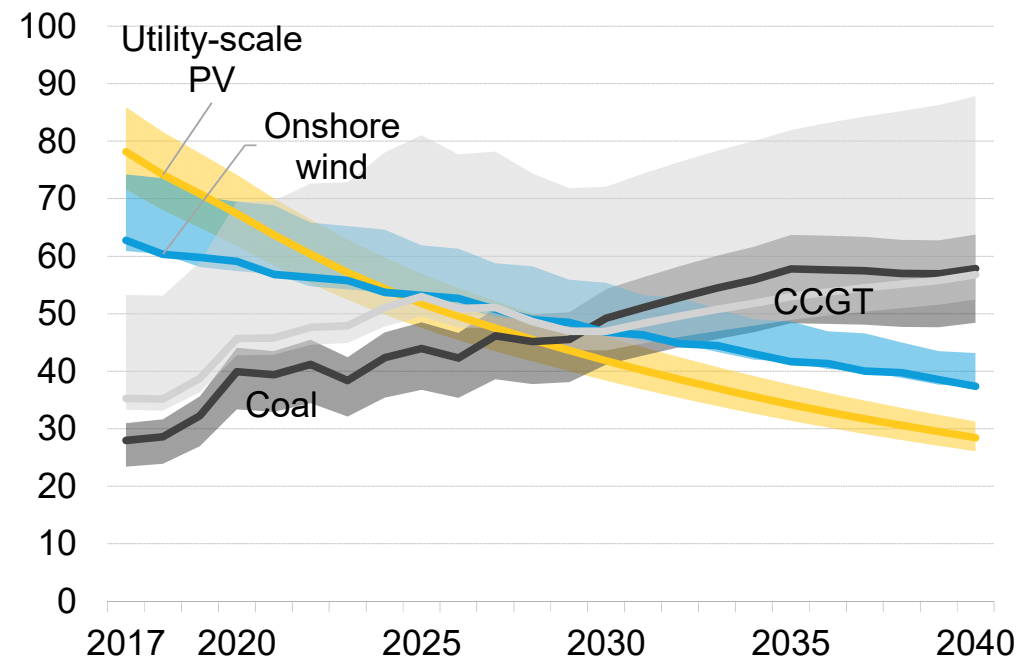
Cost of New-build Generation (India)

\$/MWh (real 2016)

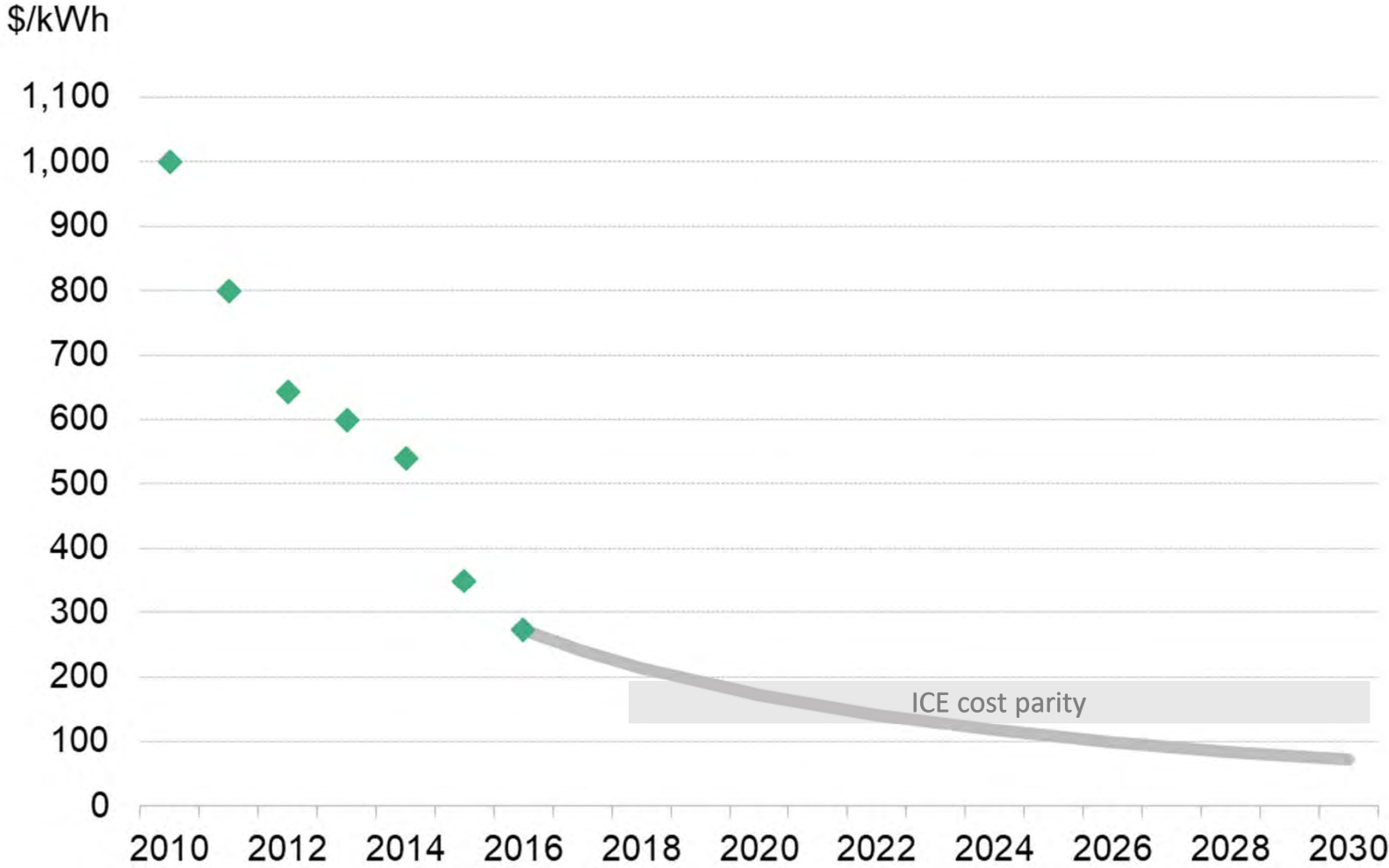


Solar vs Existing Generation (Germany)

\$/MWh (real 2016)



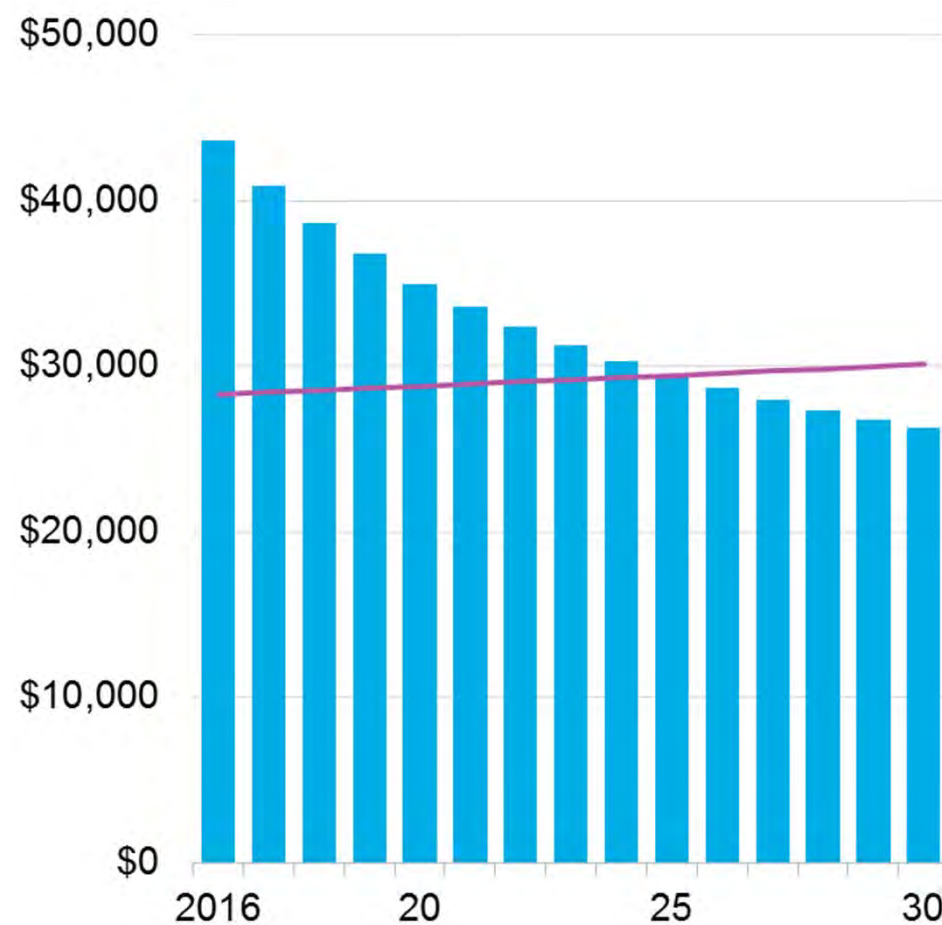
Li-ion battery costs over time



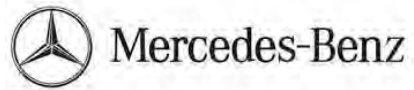
Electric Vehicles - The Point of No Return



Cost of EV vs gasoline cars



Electric Vehicle Will be Mainstream



Electric Vehicles – The Point of No Return



A detailed photograph of a complete engine kit, likely for a small aircraft or model engine, laid out on a white surface. The components are meticulously arranged, showing the engine block, cylinder head, pistons, connecting rods, crankshaft, and various smaller parts like bolts, nuts, and belts. The parts are made of metal and are in excellent condition.



Significant Near Term Impact on Oil Demand



Electric Vehicle Implications

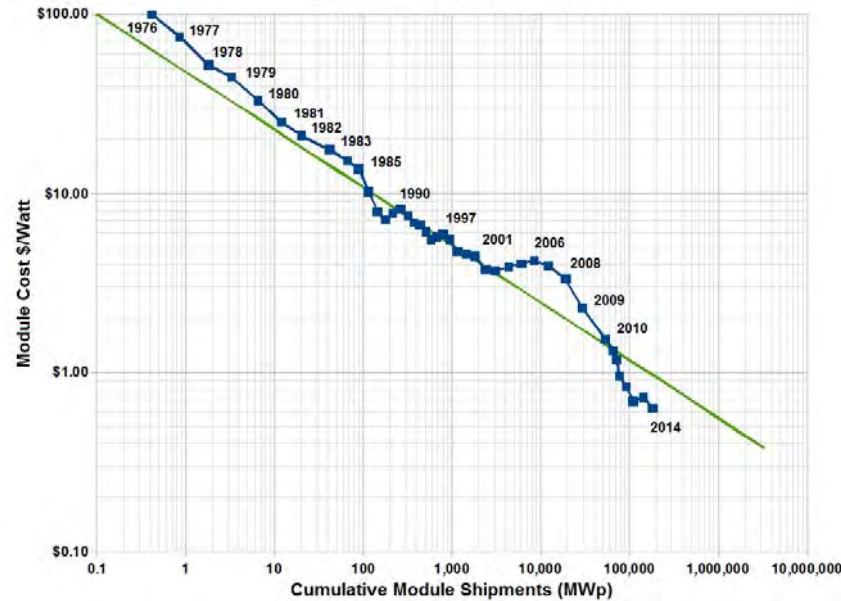


Source: Bloomberg

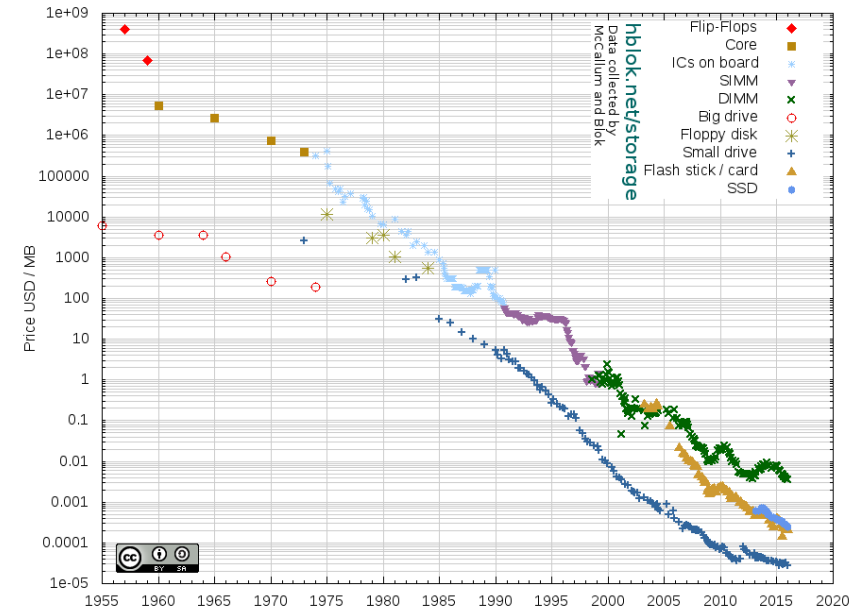


Exponential Cost Reduction > New Applications

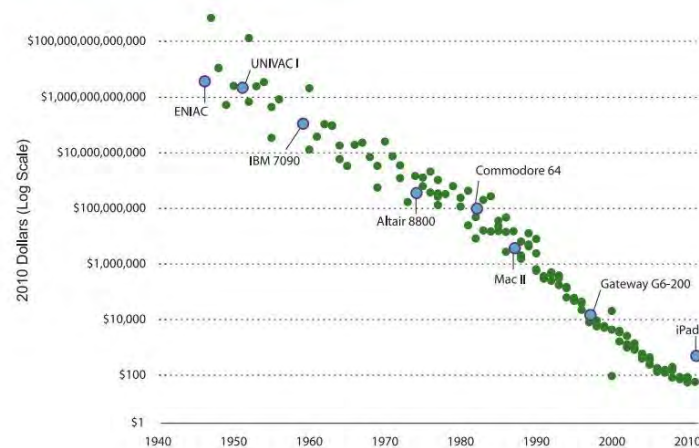
Swanson's Law



Historical Cost of Computer Memory and Storage

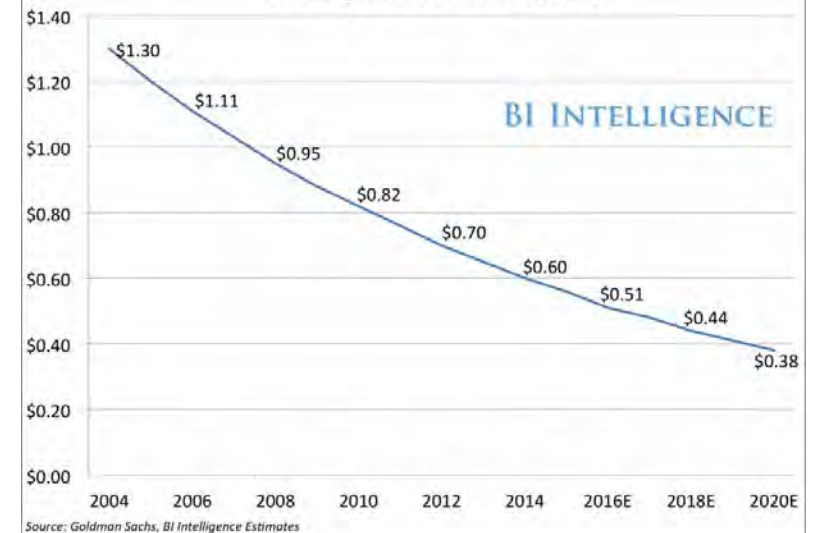


Cost of Computing Power Equal to an iPad 2



Note: The iPad2 has computing power equal to 1600 million instructions per second (MIPS). Each data point represents the cost of 1600 MIPS of computing power based on the power and price of a specific computing device released that year.
Source: Moravec n.d..

Average Sensor Cost Forecast



Source: Goldman Sachs, BI Intelligence Estimates

'Monitored' Autonomous Driving available today



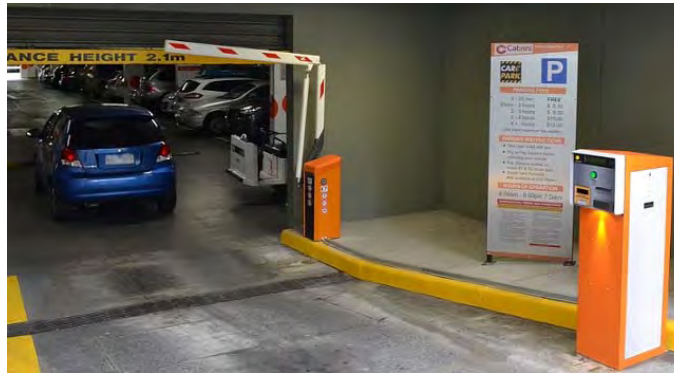
Autonomous Buses – Already in Operation



Mobility as a Service – Networked, Autonomous Cars



Broader Implications – Large and Widespread



The 'New World' Has Already Arrived



Solar is now the cheapest source of new electricity supply globally



3D printing of metal parts is already in commercial use



Offshore wind power is now as cheap as new coal fired power



24hr electricity from solar and batteries is now competitive with grid power



Mass market electric vehicles are available today



Drones are approved for commercial use



Autonomous cars are driving on our roads today (and available for hire)

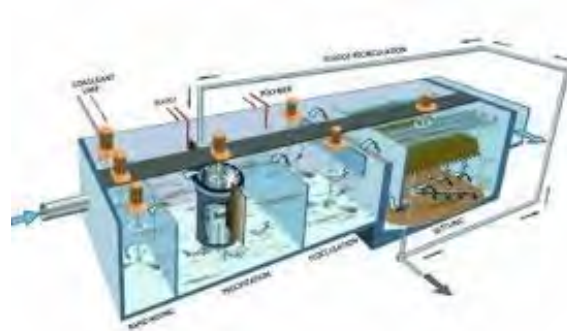


Collaborative robots are already cheaper than developed country labour costs

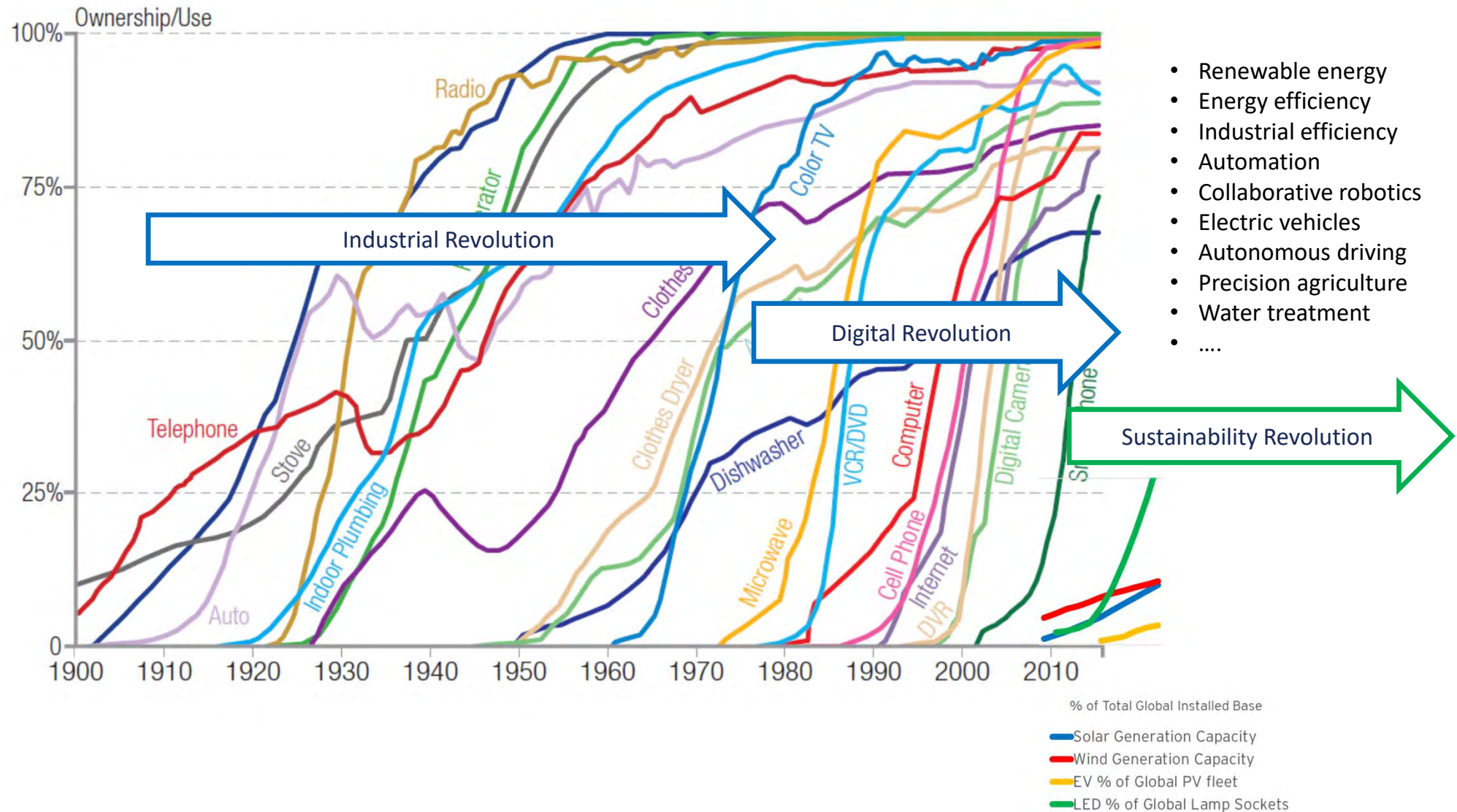


The technology for 'sci-fi' healthcare is already here today

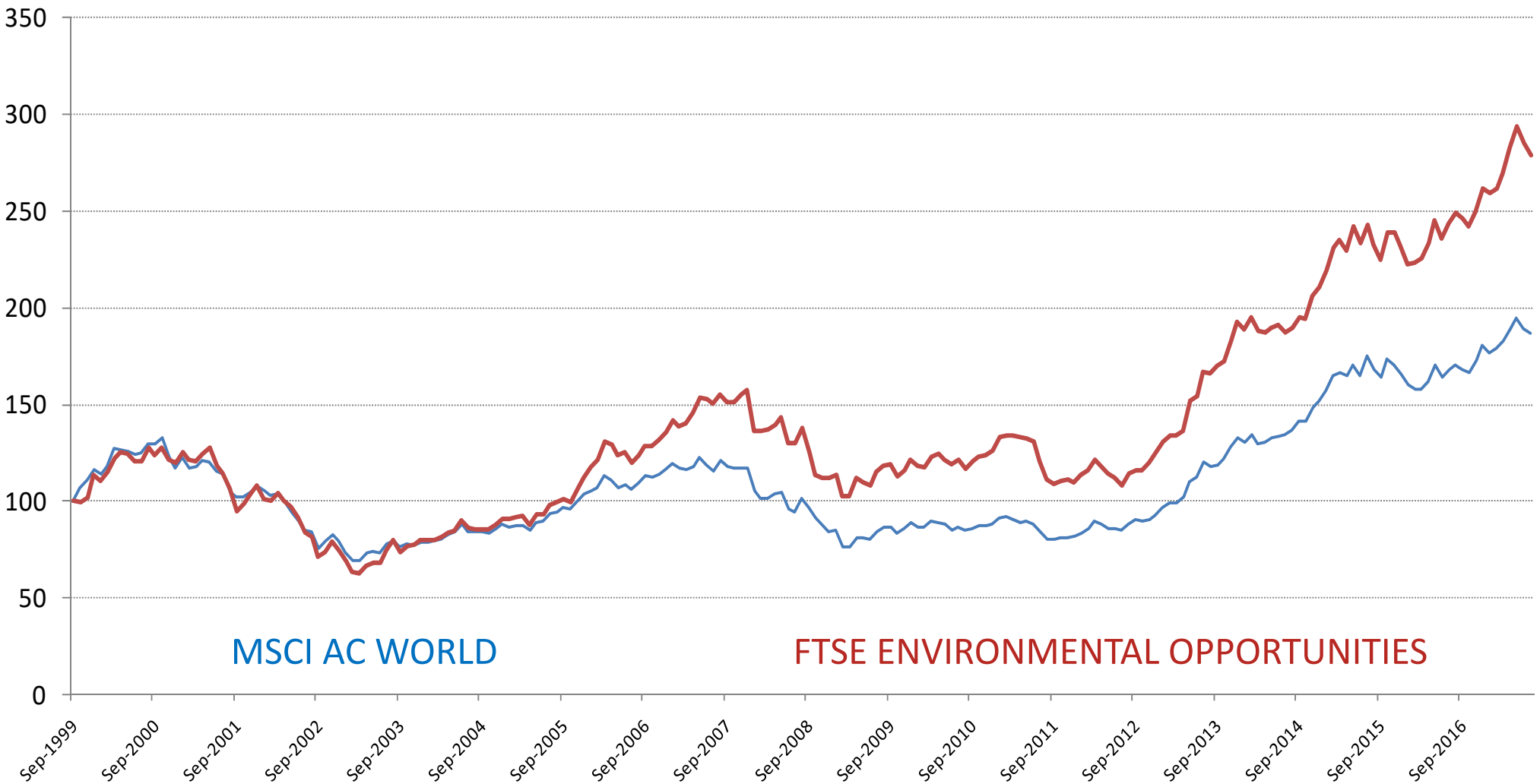
Less Disruptive But Equally Significant Changes




The Beginning of a New Period of Growth



Outperformance of Environmental Equities





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***The world is
changing.***

Don't get stranded.

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