

NANUK ASSET MANAGEMENT



NANUK
ASSET MANAGEMENT

Investing Sustainably
Managing Responsibly



The Sustainability Revolution

Tom King, CIO
December 2018

NANUK NEW WORLD FUND - FOCUS



*CLEAN
ENERGY*



*ENERGY
EFFICIENCY*



*INDUSTRIAL
EFFICIENCY*



WATER



FOOD



*WASTE/RECYCLING
POLLUTION CONTROL*



*HEALTHCARE
TECHNOLOGY*



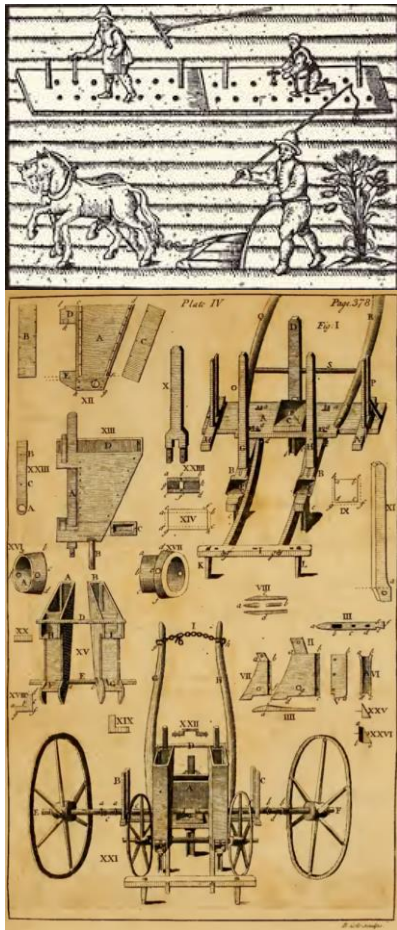
*ADVANCED &
SUSTAINABLE
MATERIALS*

NANUK INVESTMENT UNIVERSE - EXAMPLES

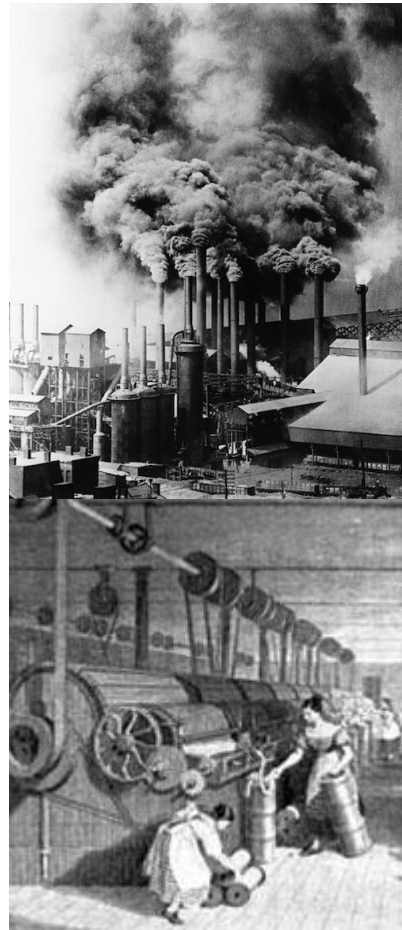


THE SUSTAINABILITY REVOLUTION

Agricultural Revolution



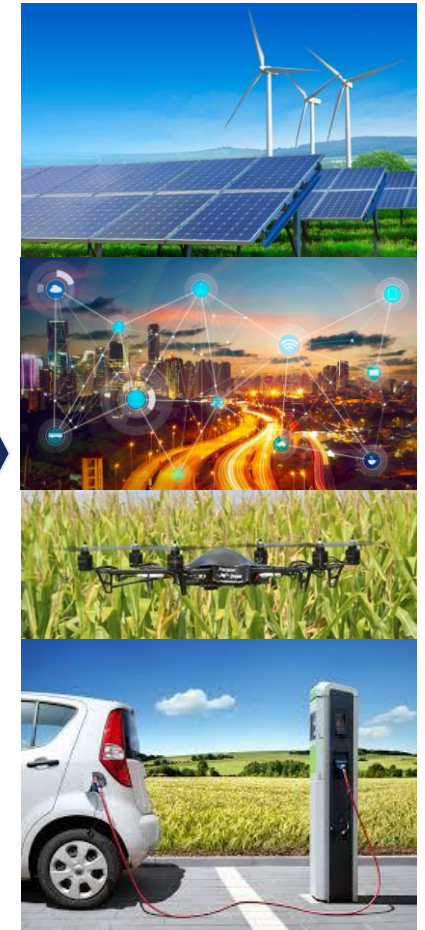
Industrial Revolution



Digital Revolution

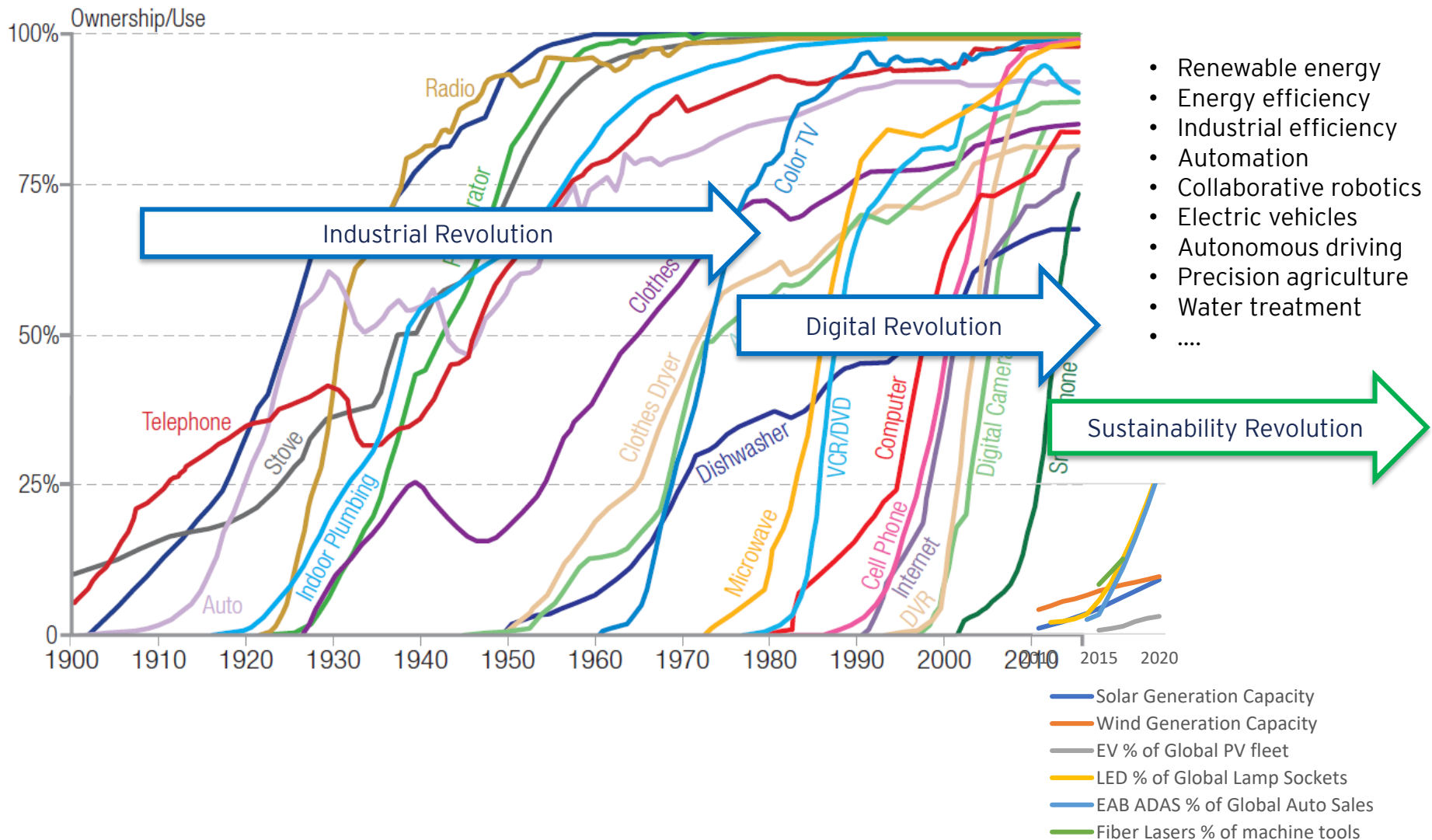


Sustainability Revolution





THE SUSTAINABILITY REVOLUTION



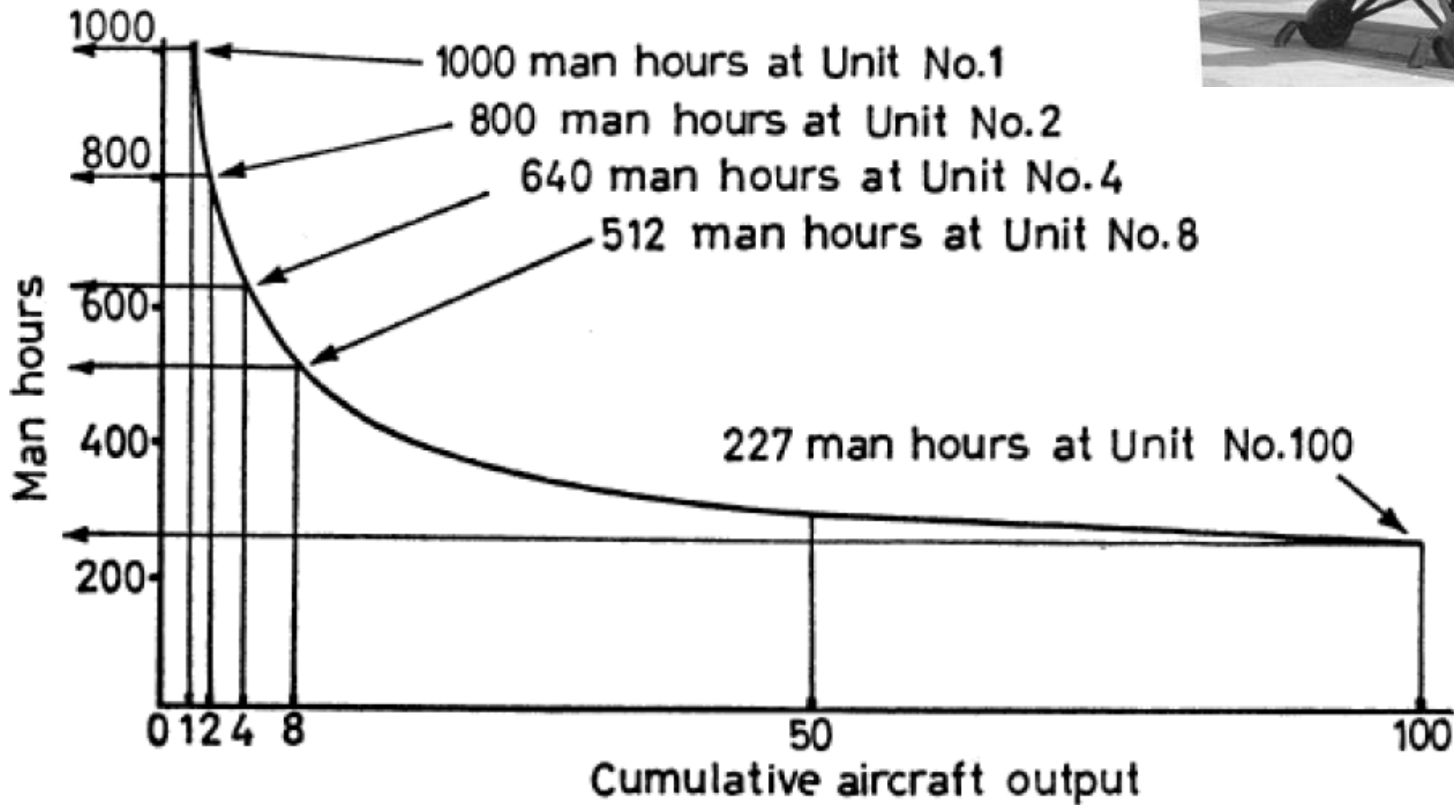
- Renewable energy
- Energy efficiency
- Industrial efficiency
- Automation
- Collaborative robotics
- Electric vehicles
- Autonomous driving
- Precision agriculture
- Water treatment
-

Source: W. Michael Cox, Southern Methodist University, O'Neil Center for Global Markets Annual Report 2015-16, Nanuk extrapolation post 2015

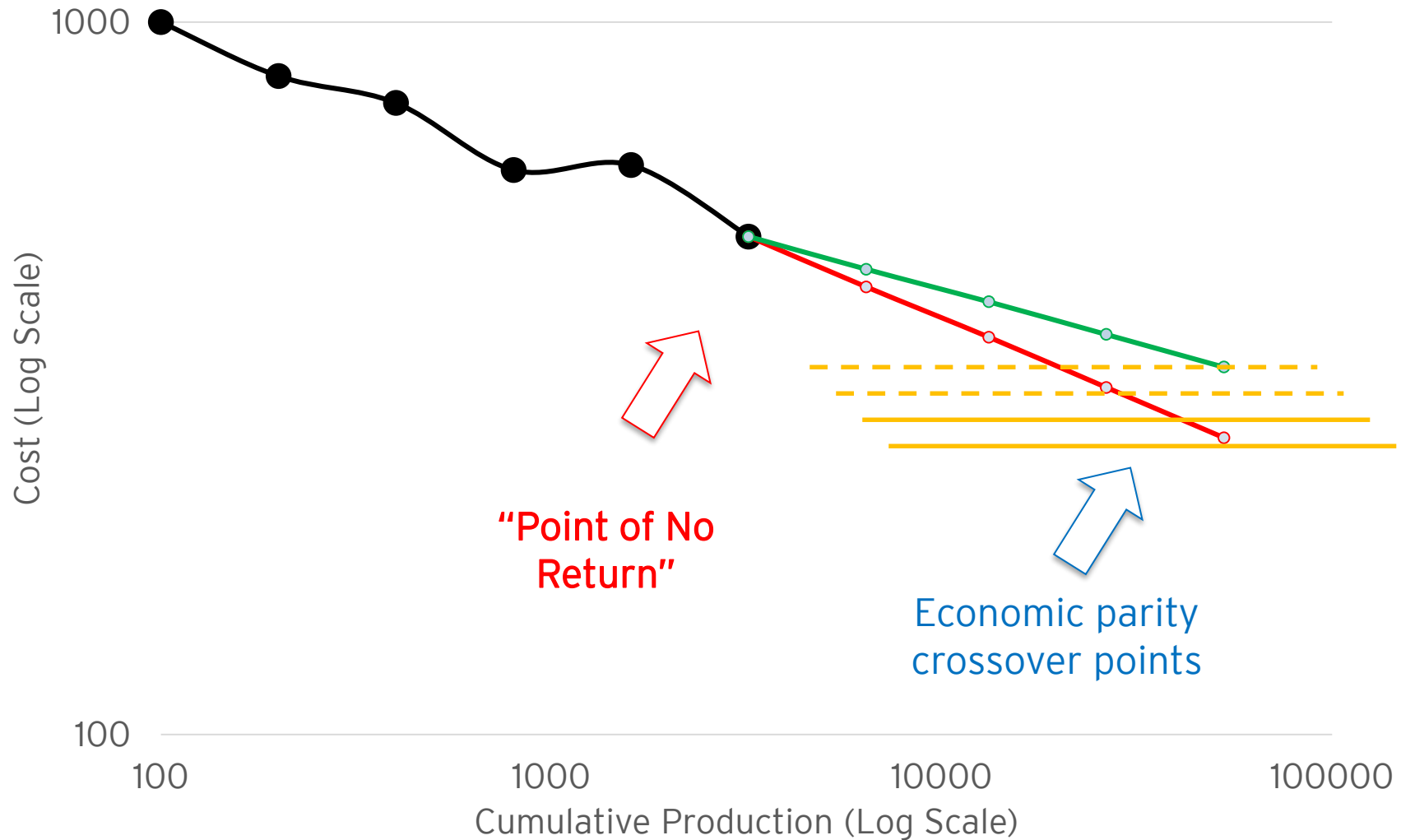
SUSTAINABILITY: THE GLOBAL ECONOMY MUST CHANGE



EXPERIENCE CURVES



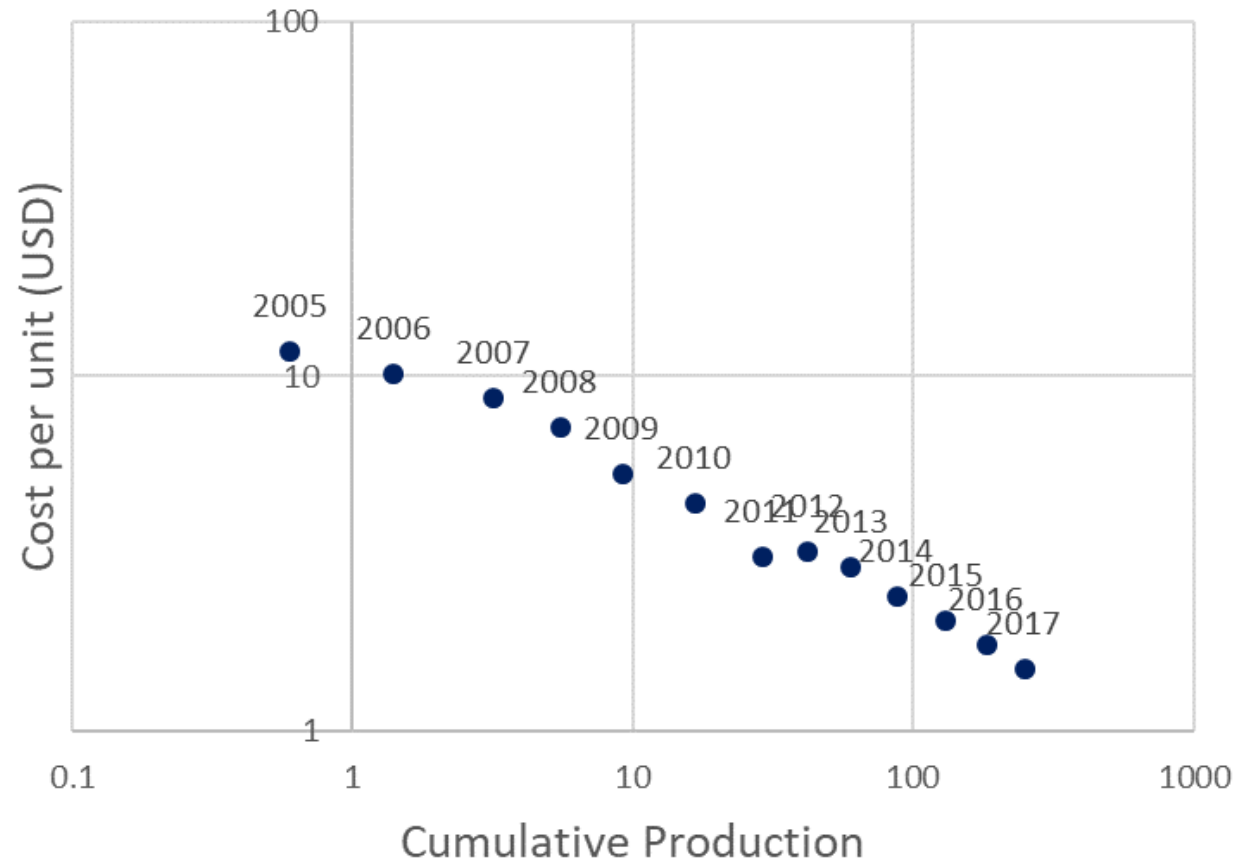
THE POINT OF NO RETURN



EXPONENTIAL COST REDUCTIONS – GPS CHIPS



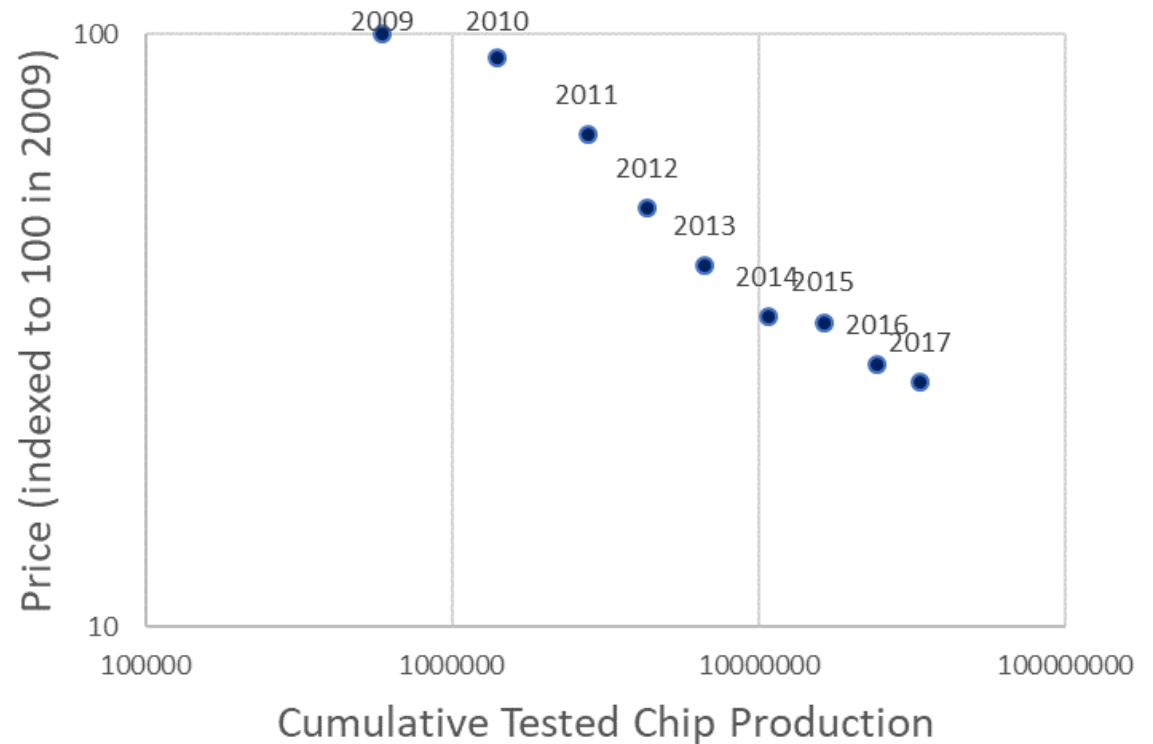
Experience Curve - GNSS / GPS chips



EXPONENTIAL COST REDUCTIONS – LASER DIODES

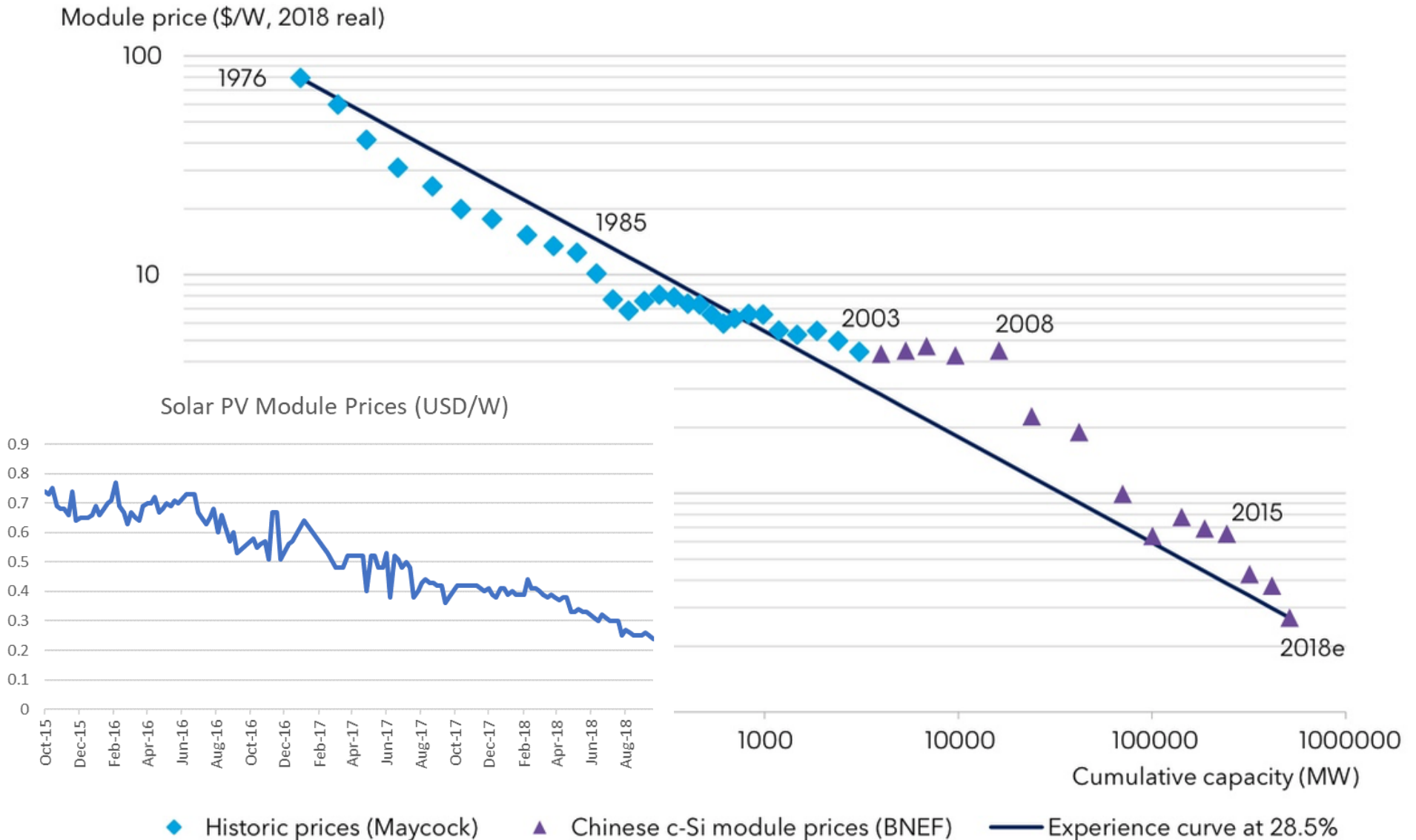


Experience Curve - Laser Diode Package





EXPONENTIAL COST REDUCTION – SOLAR PV PANELS



Source: Bloomberg New Energy Finance

SOLAR CONSISTENTLY THE CHEAPEST NEW GENERATION



UNSUBSIDISED “MERCHANT” SOLAR PROJECTS IN EUROPE



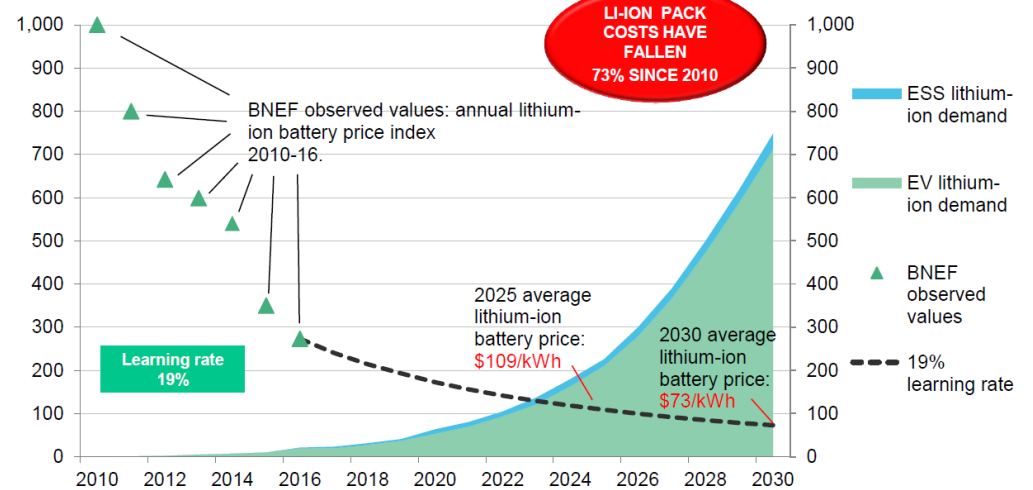
WORLD'S FIRST 10MW WIND TURBINE



LITHIUM BATTERY COST REDUCTION



Lithium-ion battery experience curve, 2010-30 (\$/kWh)

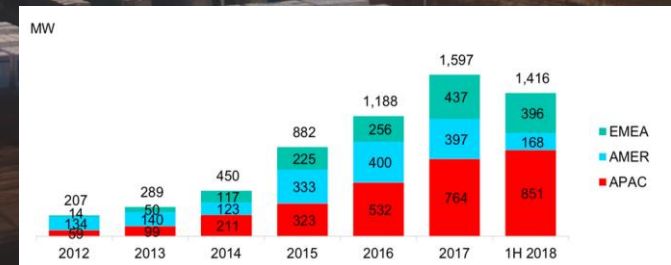
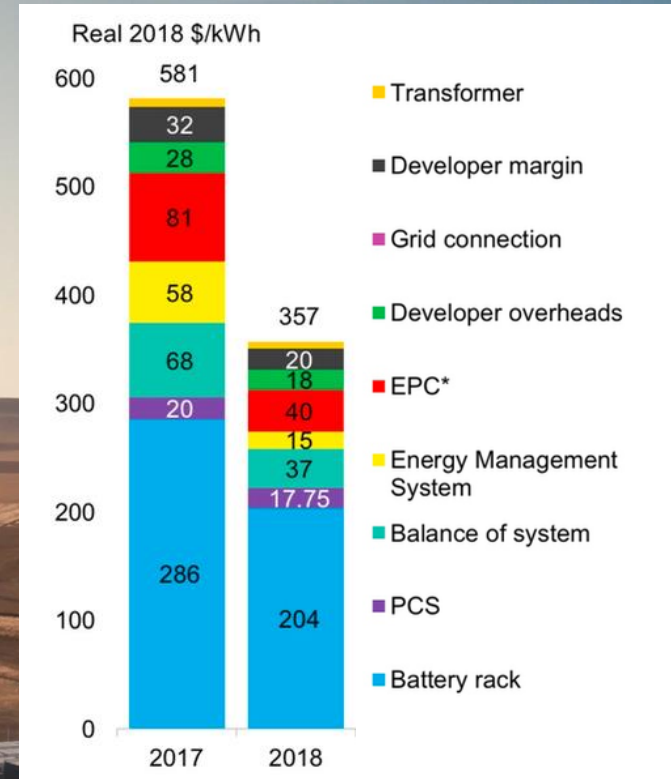


Source: Bloomberg New Energy Finance. Note: data available in 2016 lithium-ion battery price survey ([web](#) | [terminal](#)). Prices are in real (2016).



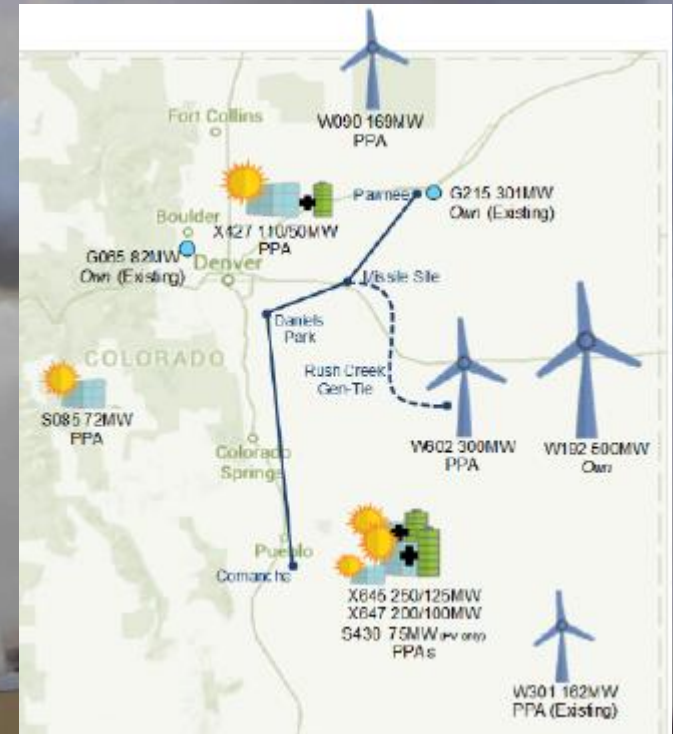
SUCCESSFUL DEPLOYMENT OF LARGE SCALE ENERGY STORAGE

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Source: Bloomberg New Energy Finance

RENEWABLES AND BATTERIES DISPLACING FOSSIL FUELS



The Asia Renewable Energy Hub 9GW \$20b



Stage 1: 3GW

2GW wind + 1GW solar + Transmission network through the Pilbara region
Capex ~A\$5B

Stage 2: 6GW

4GW wind + 2GW solar
Subsea cable to Jakarta (& Singapore?)
Capex ~A\$15B

BUSINESS > ENERGY

Macquarie Group plugs into \$22b Asian Renewable Energy Hub in Pilbara

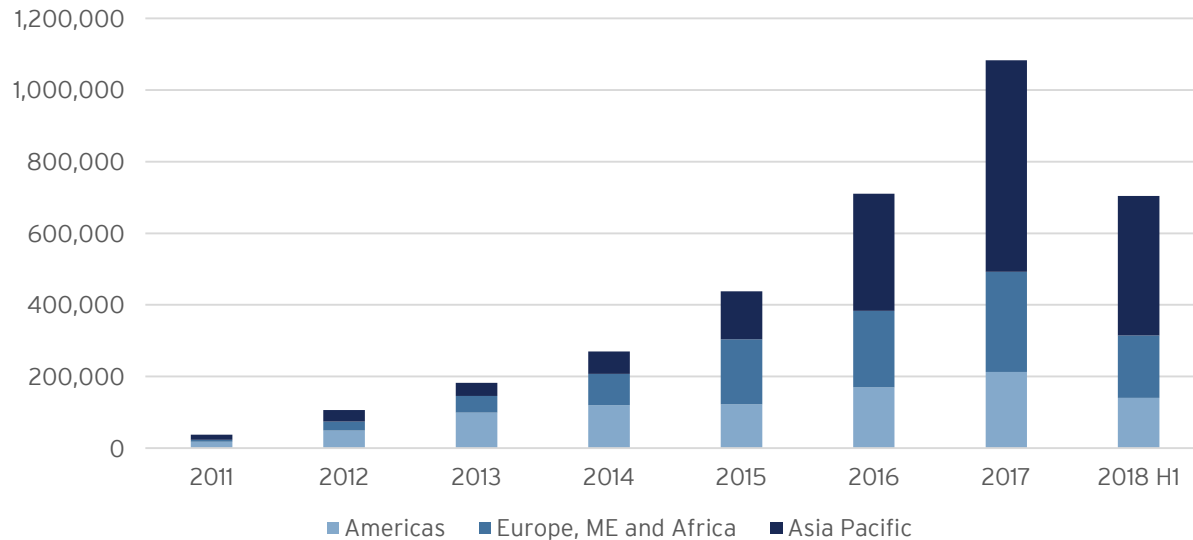
Peter Williams | The West Australian
Monday, 8 October 2018 9:59AM



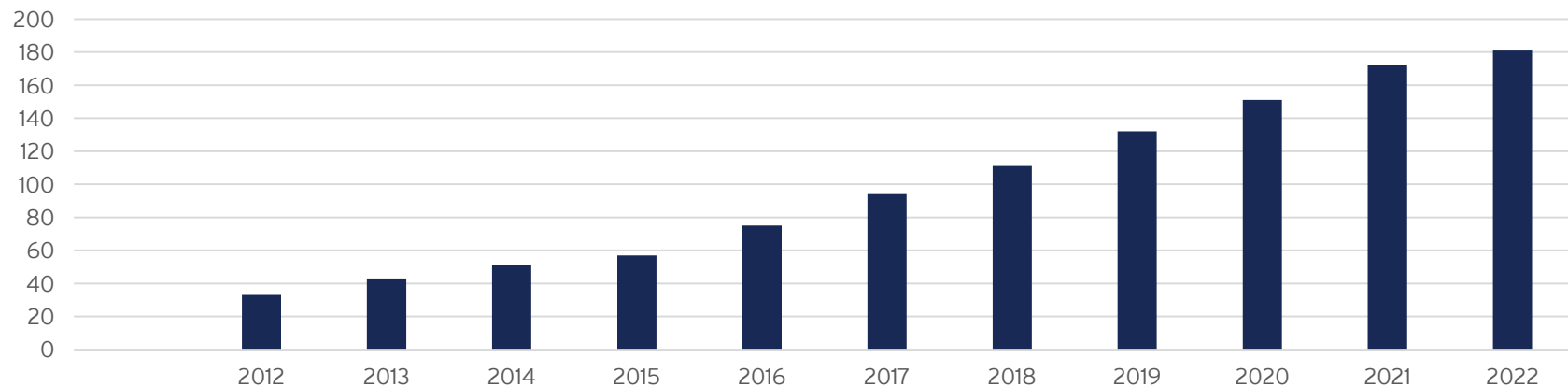


STRONG GROWTH IN ELECTRIC VEHICLE (EV) SALES

Global passenger EV sales



Number of passenger EV models available





NEW ELECTRIC VEHICLES RELEASED



V characteristics



'MONITORED' AUTONOMOUS DRIVING AVAILABLE TODAY



ADVANCED MANUFACTURING

Factory Automation



Collaborative Robotics



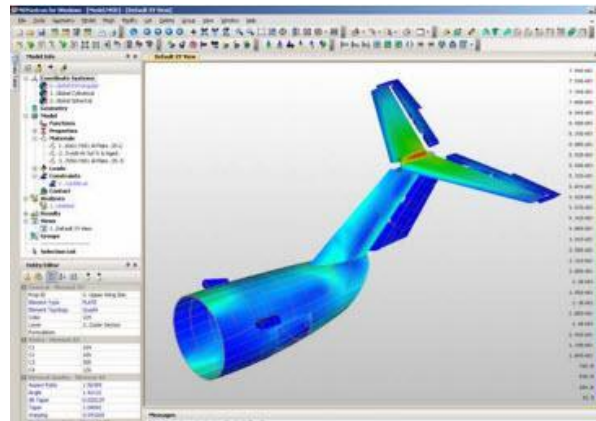
Additive Manufacturing



Industrial Lasers



CAE and PLM software



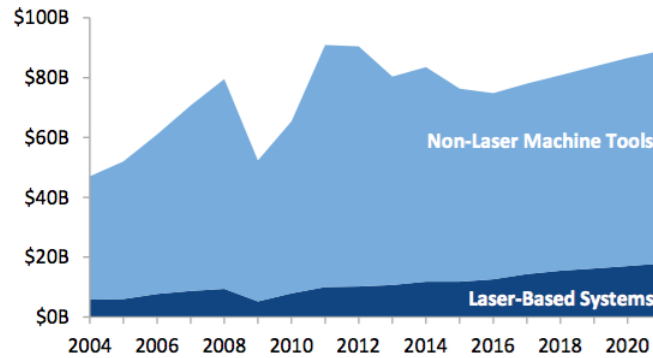
Internet of Things and "Smart Factories"



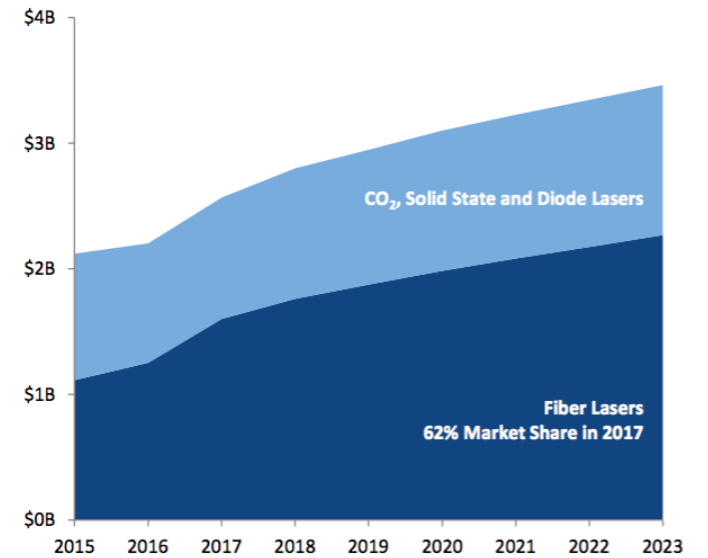
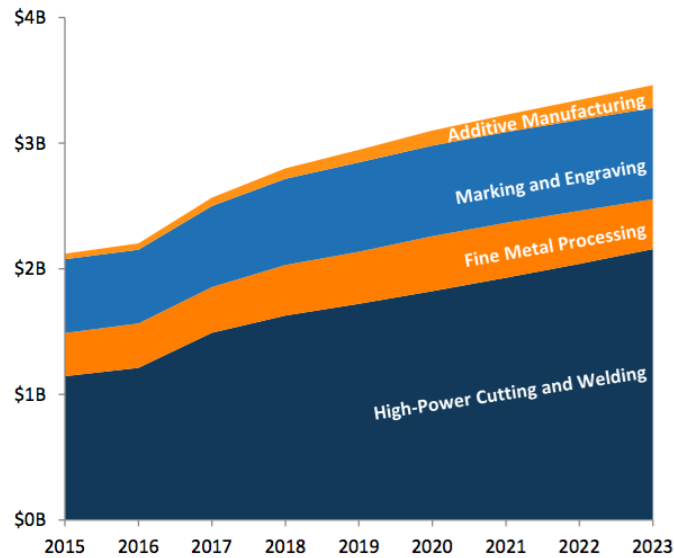
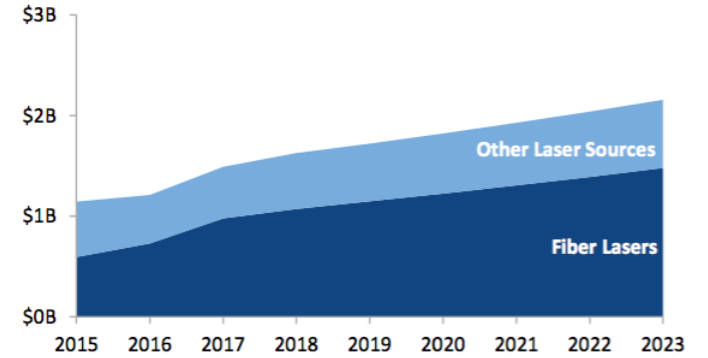
ADVANCED MANUFACTURING - INDUSTRIAL LASERS



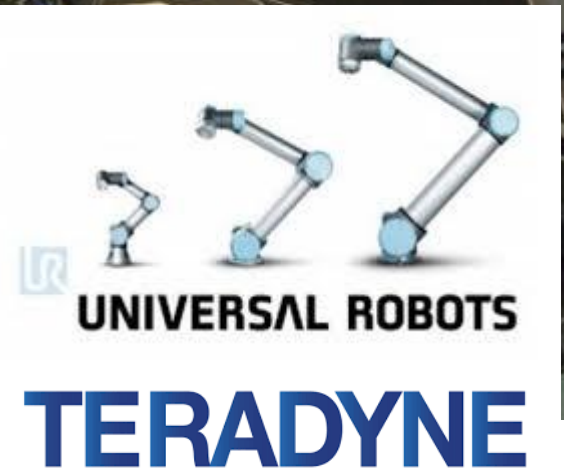
Global Machine Tool Consumption in 2017: ~\$78B
Global Laser Systems for Materials Processing in 2017: ~\$14B
Laser Systems 18% of Worldwide Machine Tools and Growing



Fiber Lasers a Growing Percentage of Annual Demand for High-Power Industrial Laser Sources



COLLABORATIVE ROBOT SALES GROW >50% YEAR ON YEAR



AUTOMATION IN GROCERY DISTRIBUTION



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SURGICAL ROBOTS





A \$10 MILLION COMPETITION TO BRING HEALTHCARE TO THE PALM OF YOUR HAND

Imagine a portable, wireless device in the palm of your hand that monitors and diagnoses your health conditions. That's the technology envisioned by this competition, and it will allow unprecedented access to personal health metrics. The end result: Radical innovation in healthcare that will give individuals far greater choices in when, where, and how they receive care.

The winning team will develop a Tricorder device that will accurately diagnose 13 health conditions (12 diseases and the absence of conditions) and capture five real-time health vital signs, independent of a health care worker or facility, and in a way that provides a compelling consumer experience.

[CLICK HERE FOR DETAILS ON HEALTH CONDITIONS >](#)



DISRUPTION IN LOGISTICS AND INFRASTRUCTURE



DISRUPTION IN AGRICULTURE



WORLD'S FIRST OFFSHORE FISH FARM





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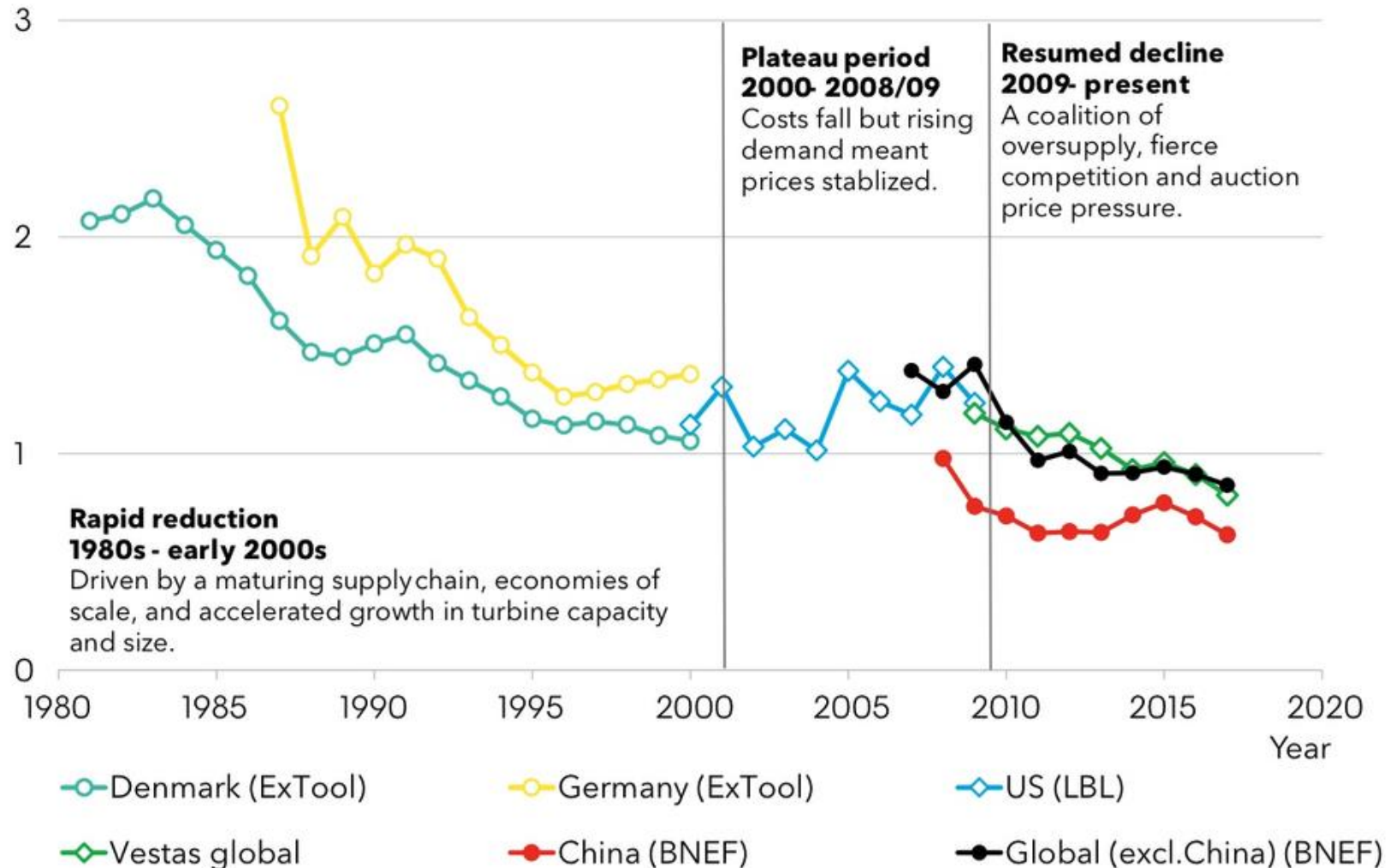
Investing Sustainably
Managing Responsibly

THE SUSTAINABILITY REVOLUTION

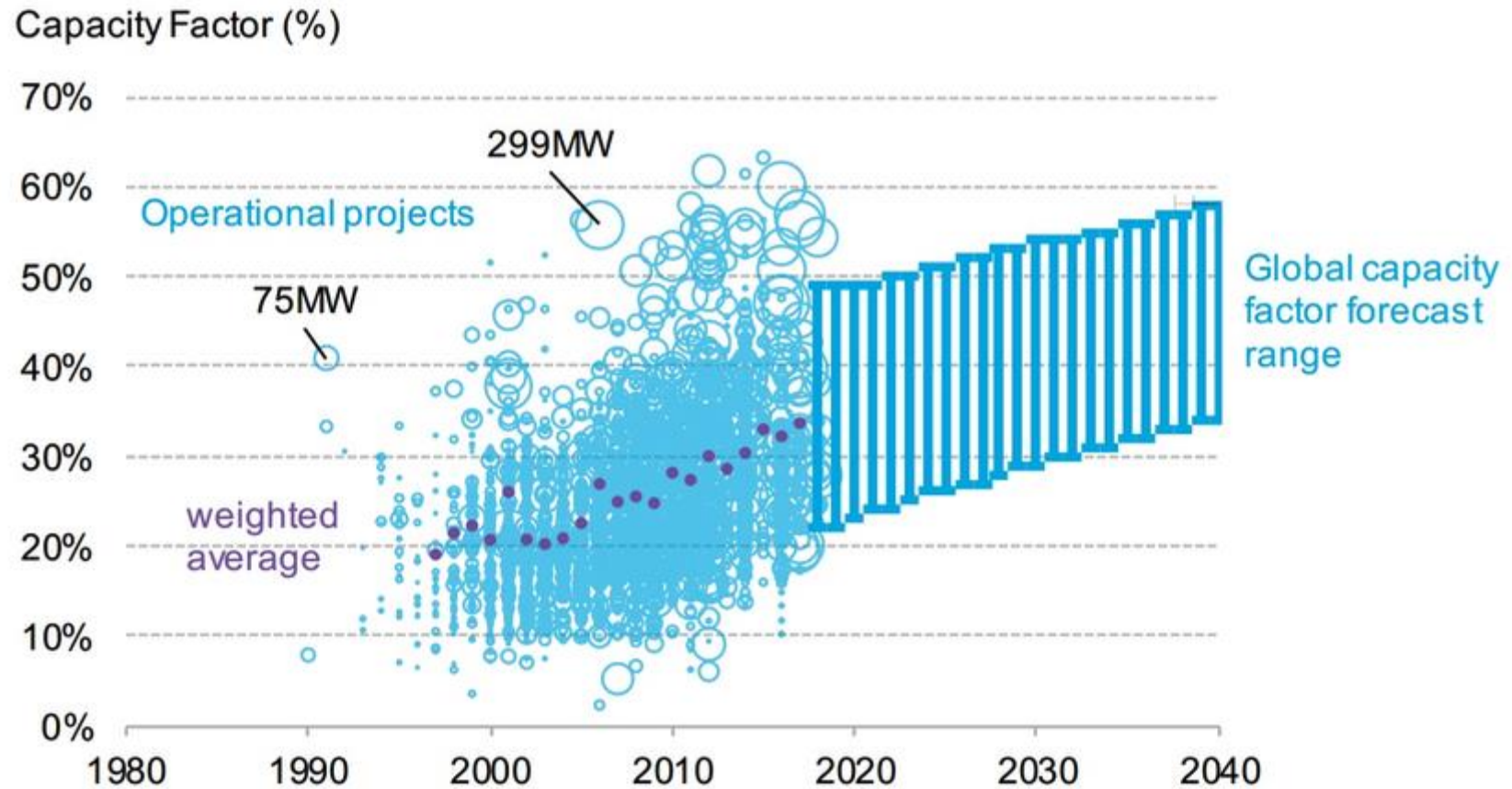
GLOBAL PROGRESS IN RENEWABLES

WIND TURBINE PRICES

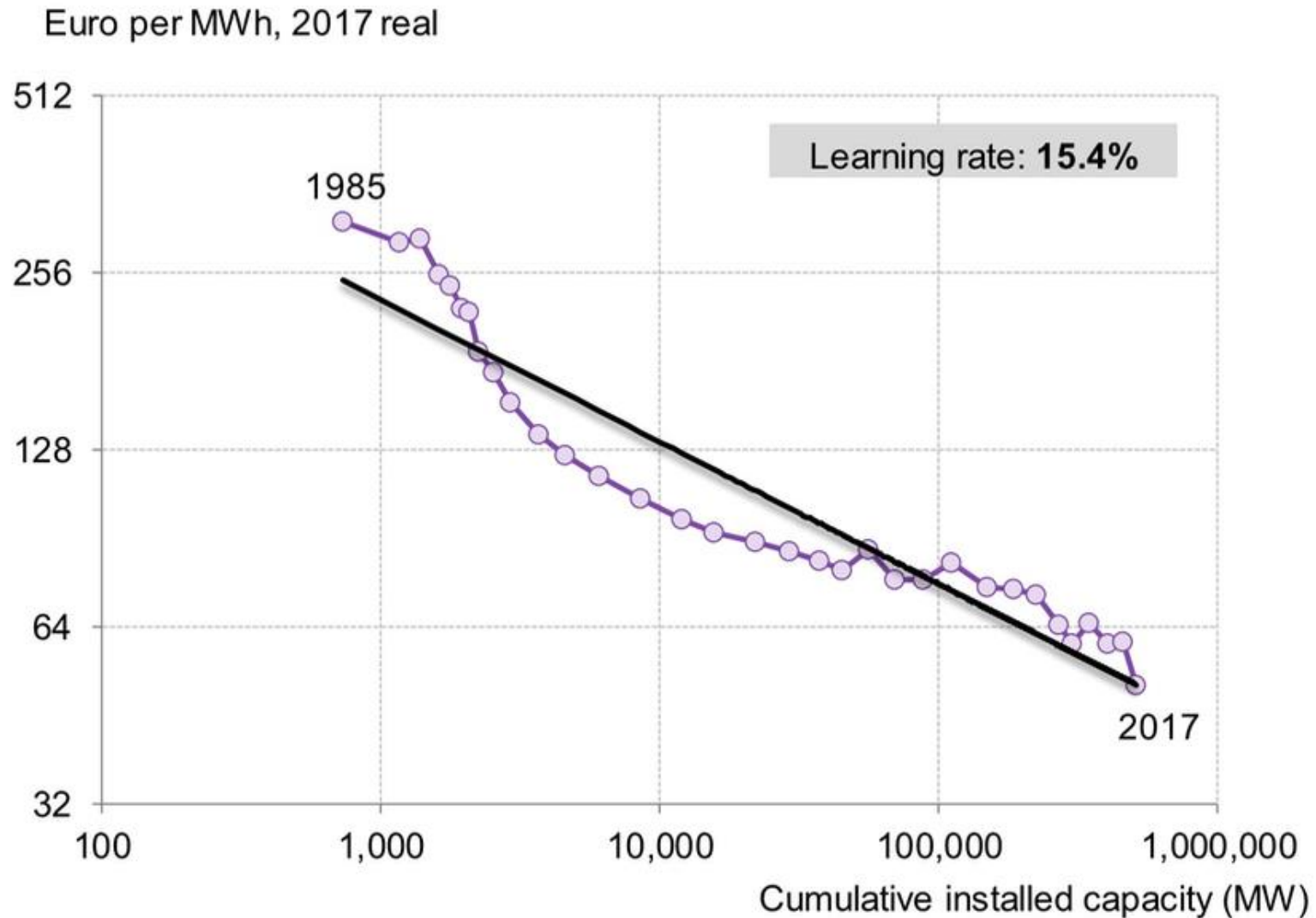
Wind turbine price (2017 mEUR/MW)



WIND PROJECT CAPACITY FACTORS

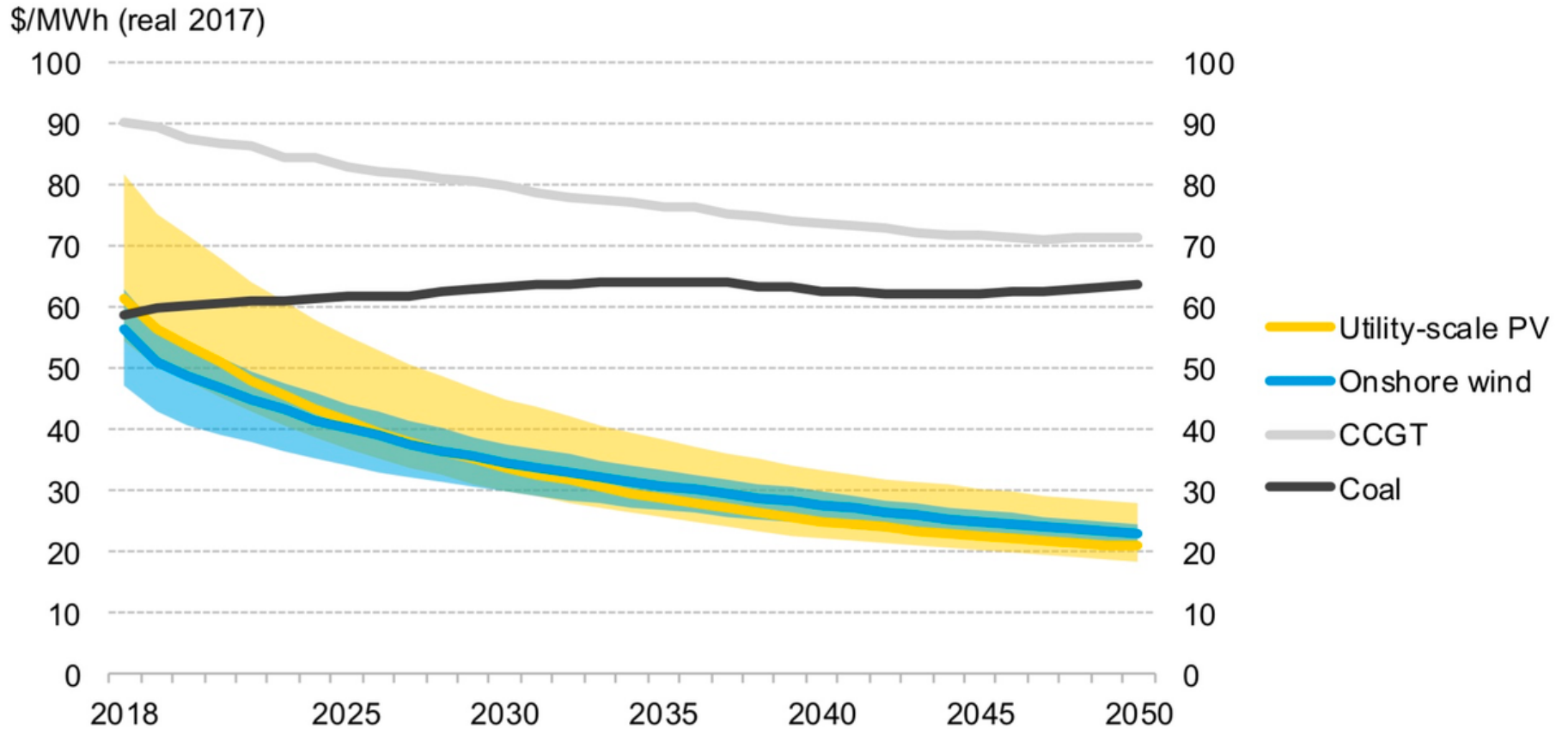


WIND ENERGY – LEVELISED COST



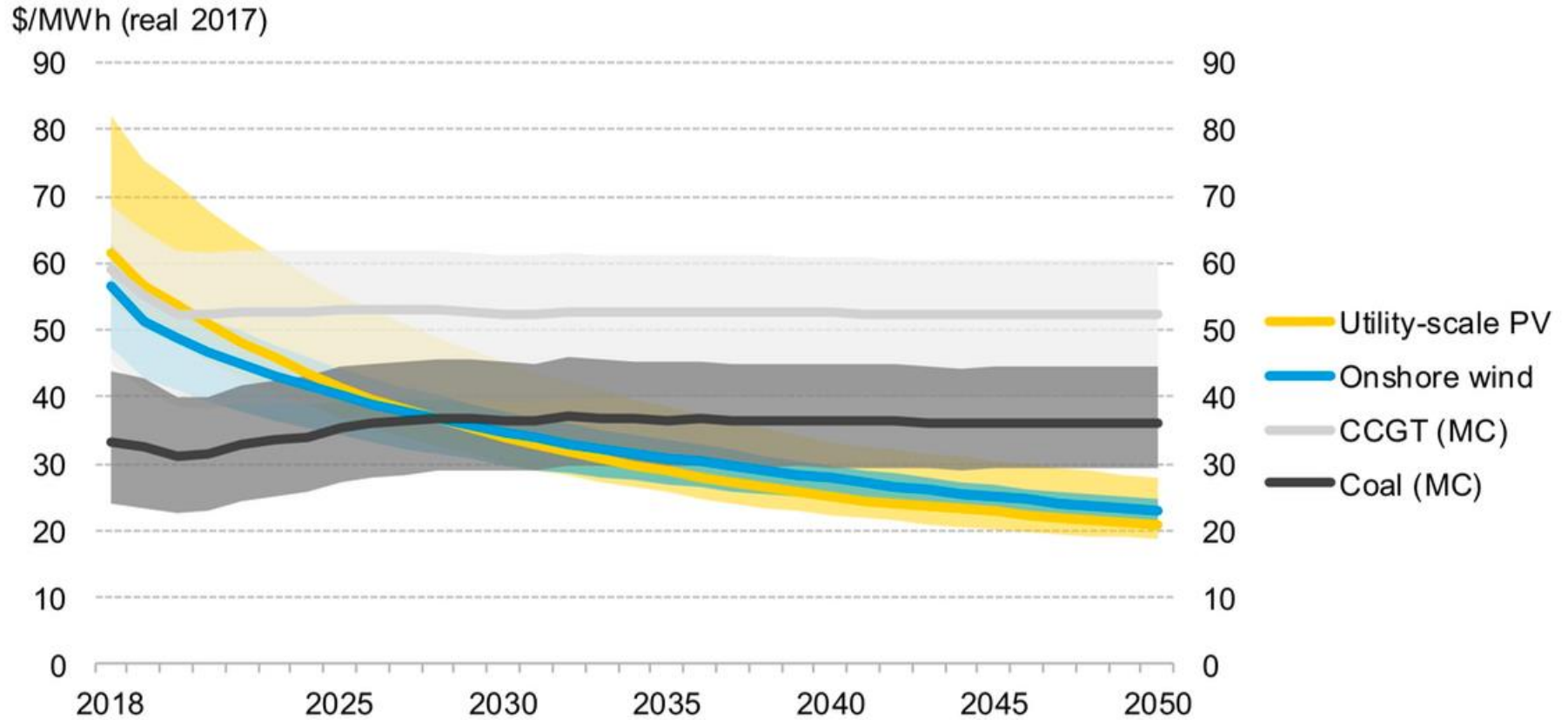
DISRUPTION IN ENERGY

Cost of New-build Generation in China (USD 2017 real)



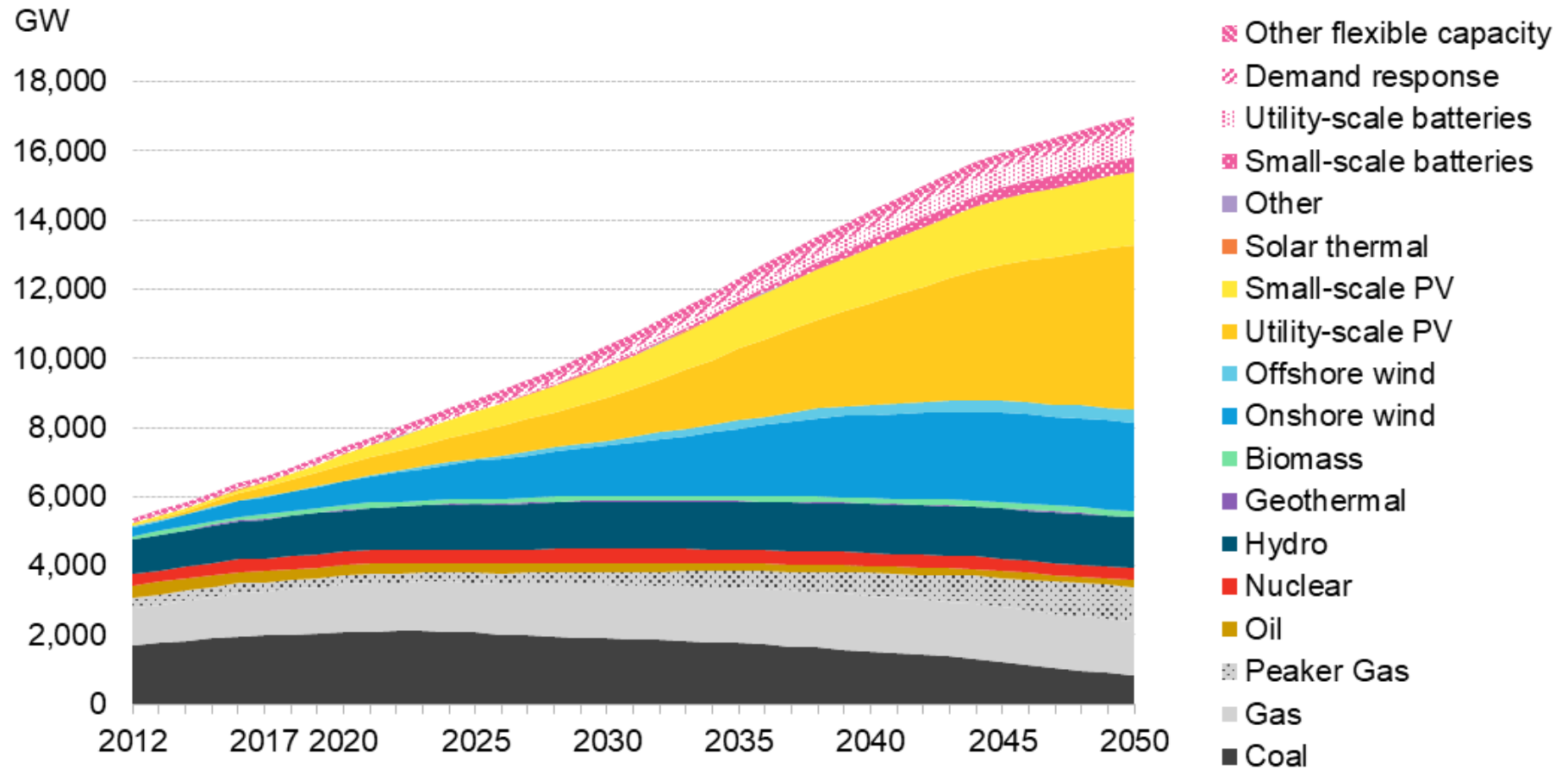
DISRUPTION IN ENERGY

Cost of new Solar and Wind generation vs existing Coal and Gas Generation in China





GLOBAL ELECTRICITY GENERATING CAPACITY





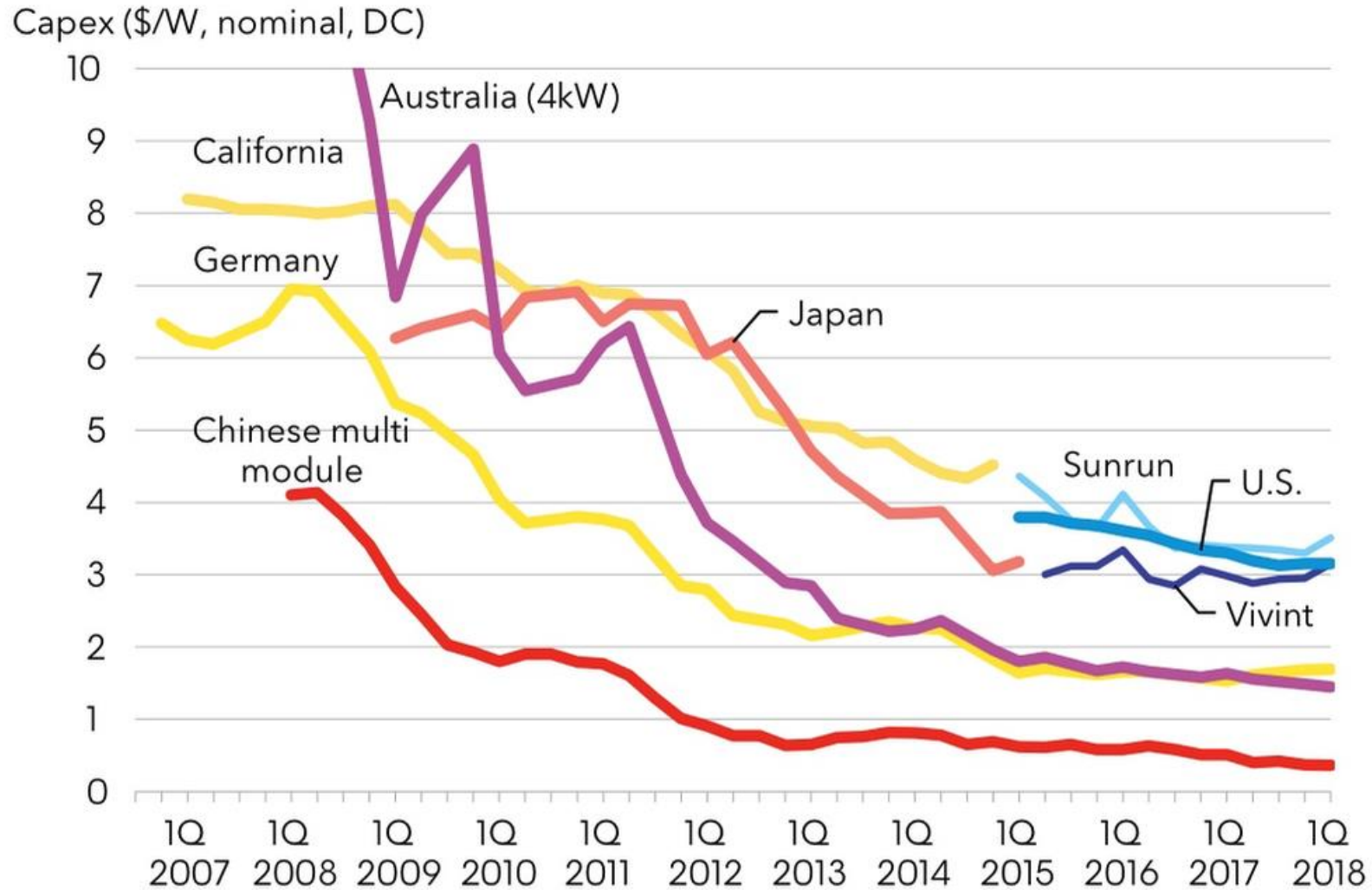
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THE SUSTAINABILITY REVOLUTION

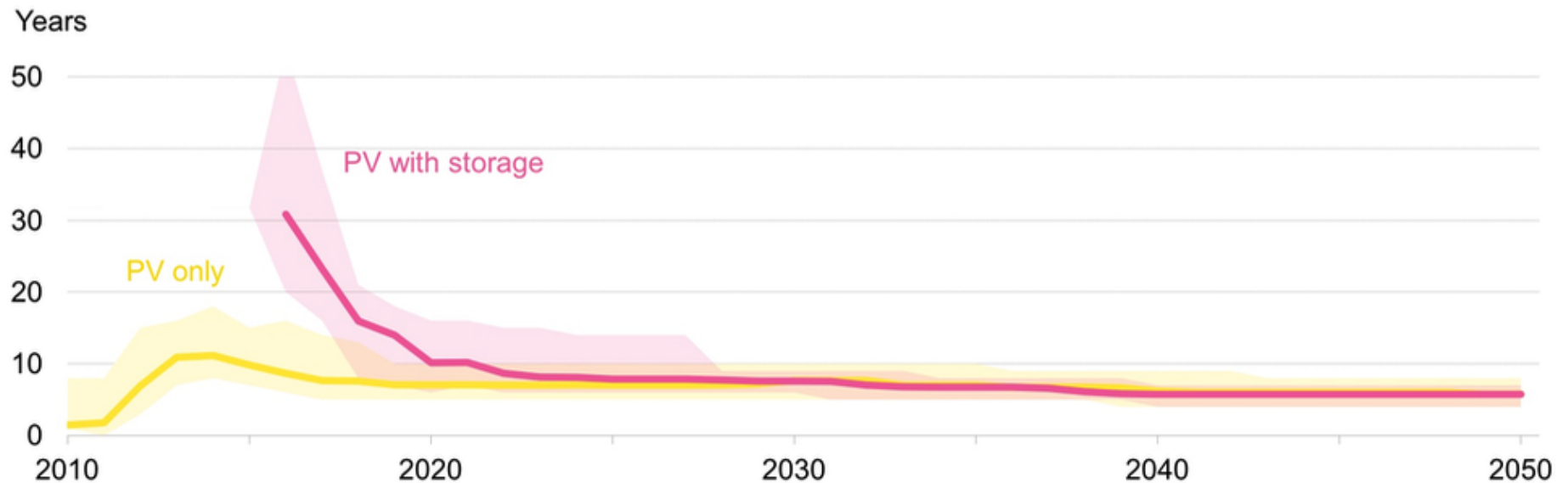
RENEWABLES IN AUSTRALIA

SMALL SCALE SOLAR WIDELY VIABLE



Source: Bloomberg New Energy Finance

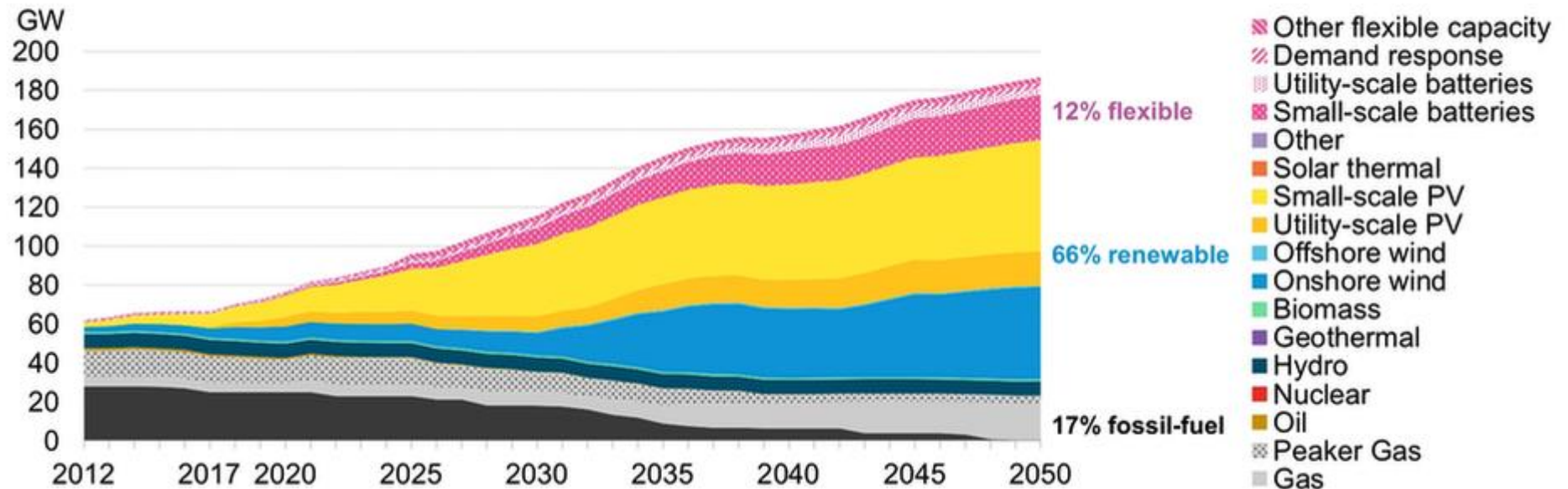
Residential payback periods





AUSTRALIAN ELECTRICITY GENERATING CAPACITY

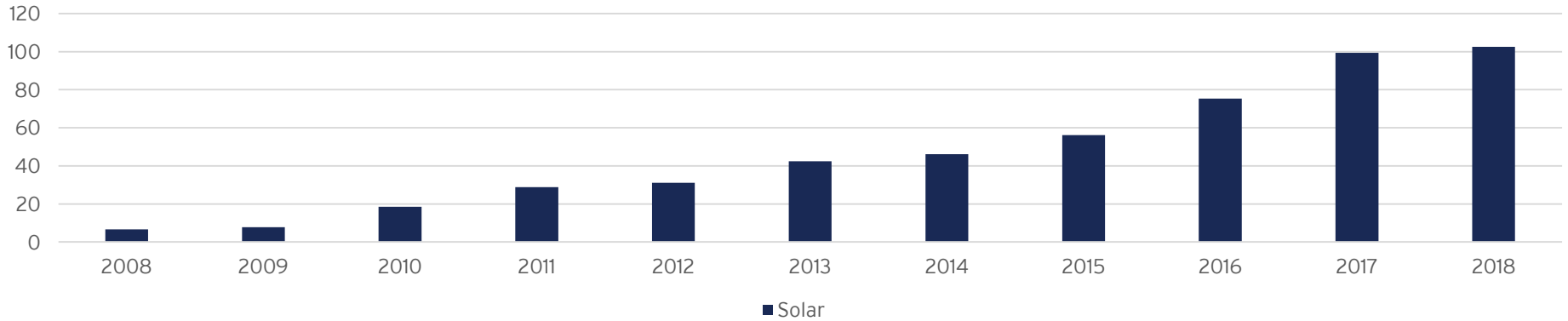
Cumulative installed capacity, by technology



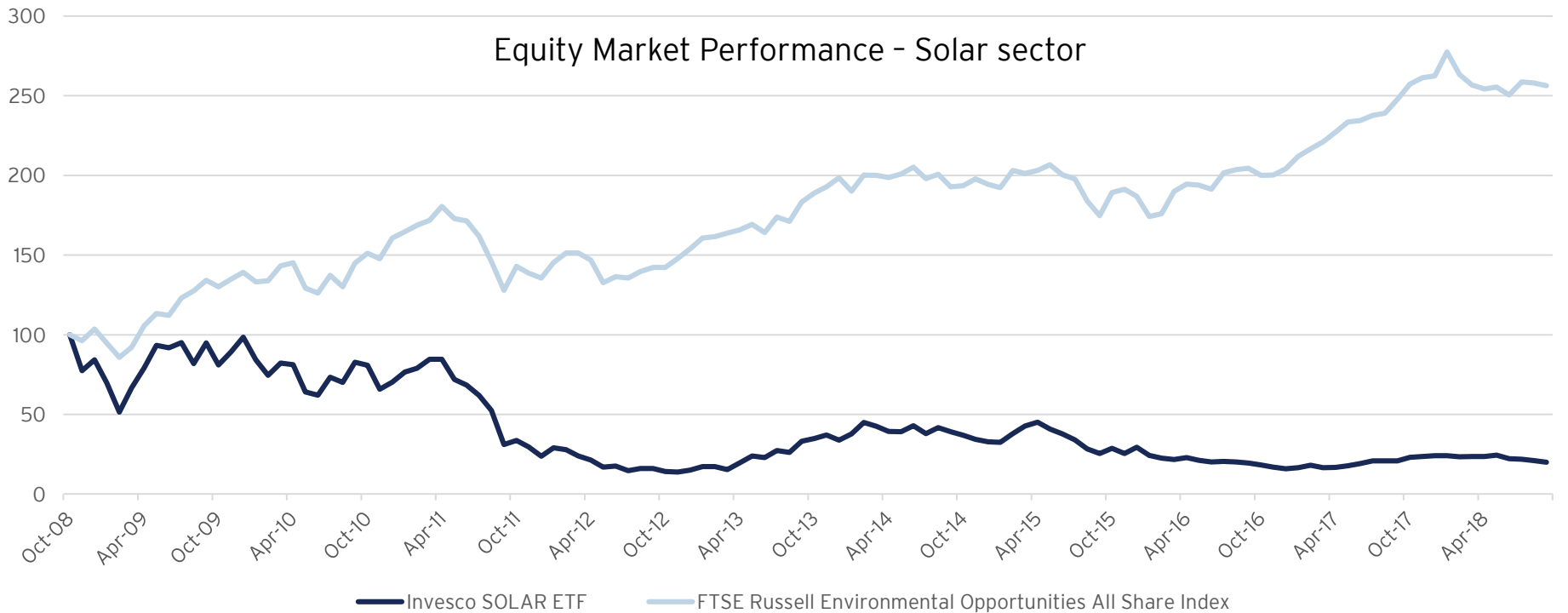


INVESTMENT CHALLENGES IN SUSTAINABLE TECHNOLOGY

Global Solar Installations (GW)



Equity Market Performance - Solar sector



Source: FactSet, Bloomberg New Energy Finance

DOWNSTREAM INNOVATION AND DISRUPTION



brightbox



Financial Metrics (Consensus)

Market Cap (USDm)	1425
P/E (NTM)	13.4
P/B (NTM)	1.1
ROE (NTM)	8.2



DOWNSTREAM INNOVATION AND DISRUPTION

INTRODUCING
SONNENBATTERIE ECO
FROM EUROPE'S LARGEST
HOME BATTERY MANUFACTURER

10,000
CYCLE
WARRANTY

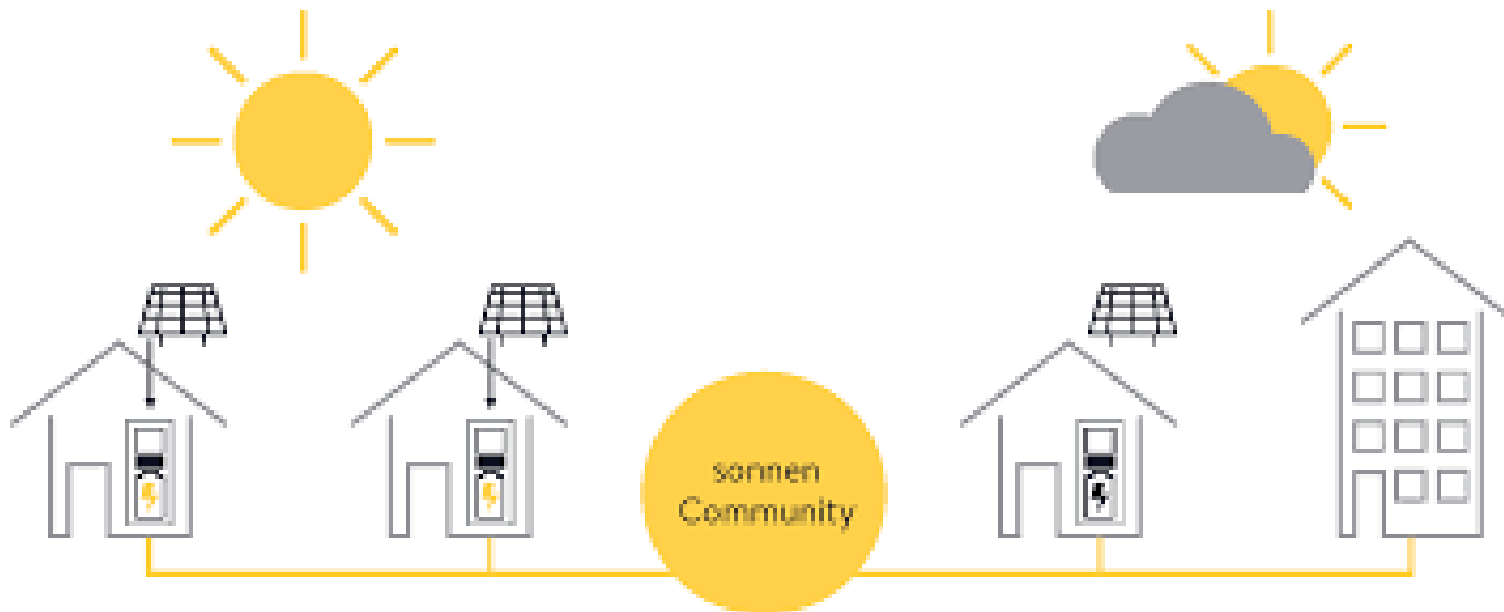
MADE IN
GERMANY

MODULAR
DESIGN

sonnen

COMPATIBLE

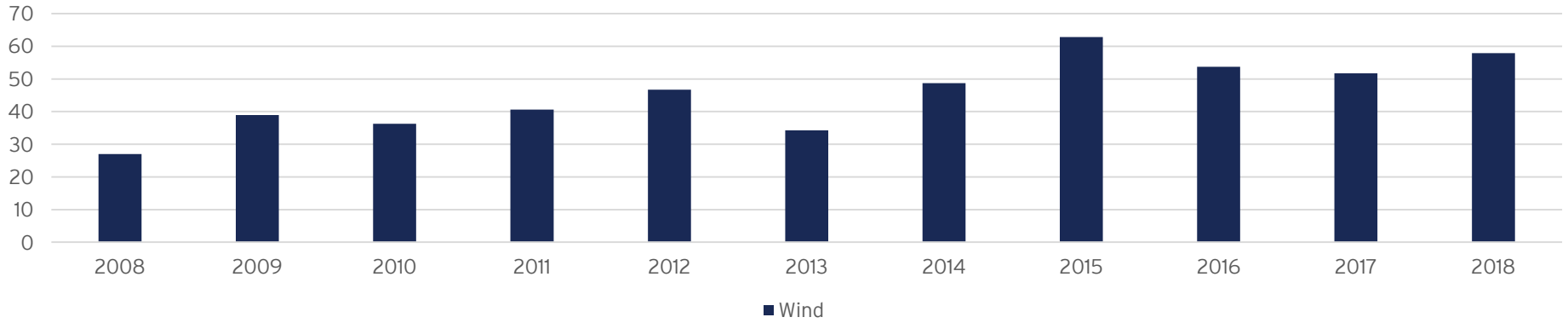
COMPATIBLE



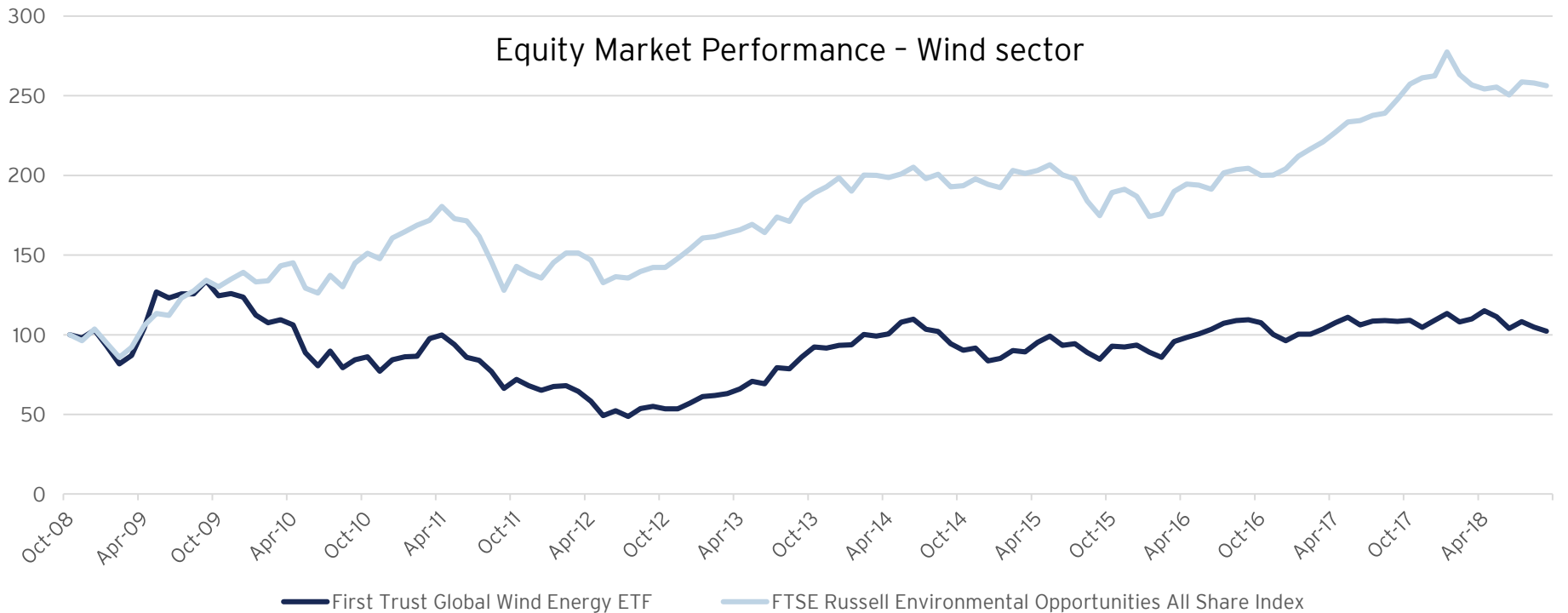


INVESTMENT CHALLENGES IN SUSTAINABLE TECHNOLOGY

Global Wind Installations (GW)



Equity Market Performance - Wind sector



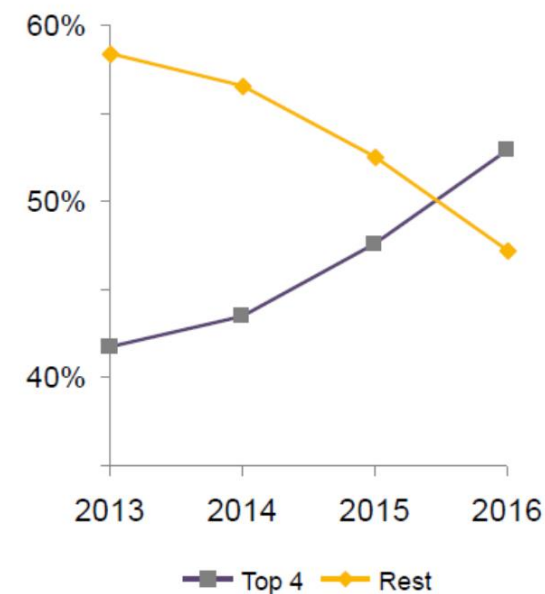
Source: FactSet, Bloomberg New Energy Finance

WIND INDUSTRY MATURING

Wind Turbine Sector	Historically	Today
Barriers to Entry	Moderate	Increasing
Capital Intensity	Low - Moderate	Low
Price Stability	Slow decline	Slow decline
Industry Structure	Moderately fragmented	Increasingly concentrated
Commoditization	Moderate	Increasing differentiation
Demand Stability	Historically Low	Improving



Market share² (cum. in %)

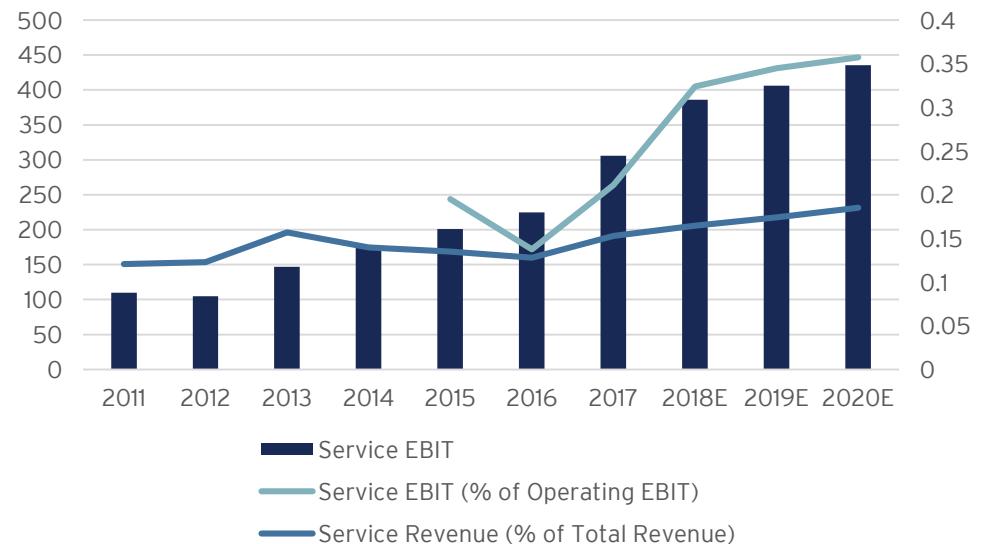


VESTAS CASE STUDY

Vestas



- Global leader in Wind Turbine Generators
- Leading technology with high R&D investment
- High return on capital
- Strong balance sheet
- Attractive high margin service business



Source: FactSet

VESTAS CASE STUDY

- Increasing industry consolidation
- Accelerating global wind farm development
- Accelerating order flow
- Attractive valuation after significant fall in 2017

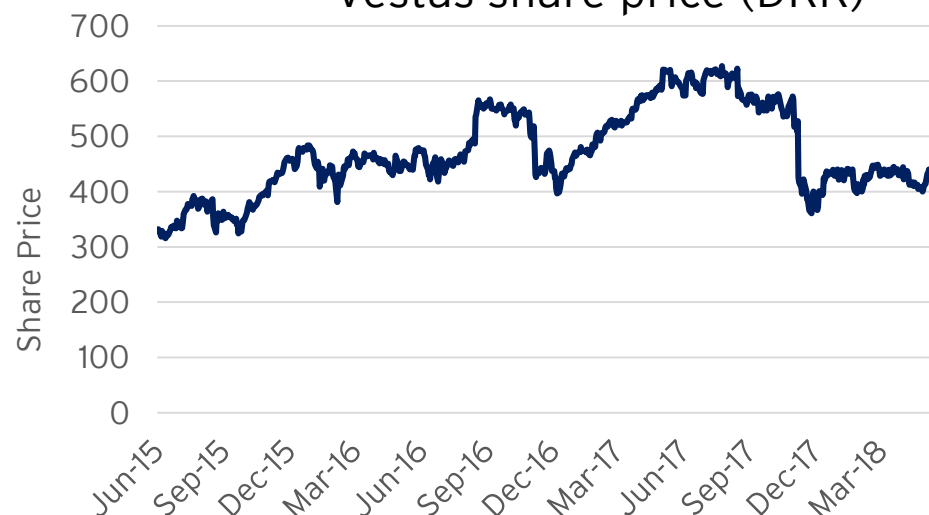
Forecast Global Wind Installations (GW)



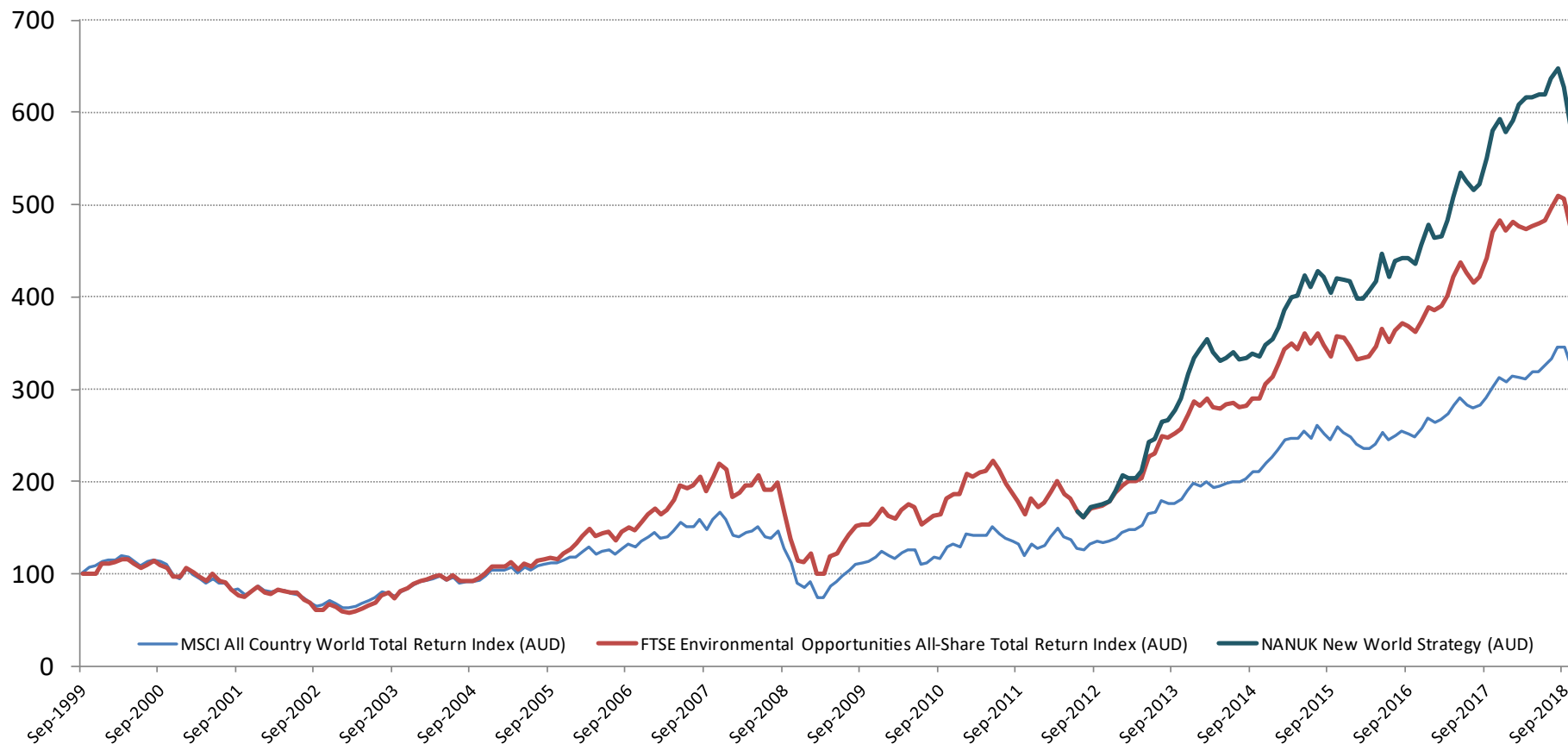
Financial Metrics (Consensus)

Market Cap (EURb)	11.0
Net Cash (EURb)	3.3
ROE (NTM)	22%
PE (NTM)	14.2x
EV/EBIT (NTM)	7.6x
Div Yield	2.2%

Vestas share price (DKK)




SUSTAINABILITY REVOLUTION – INVESTMENT IMPLICATIONS


















Sources: Nanuk, Bloomberg, FTSE Russell, \$A, annualised returns. The Nanuk "Strategy" performance constitutes the following: (1) Nanuk New World Fund since launch on 2 Nov 2015, and (2) gross / pre-fee performance of the long book of the Nanuk Global Alpha Fund less an annualized expense ratio of 2.9% (from 31 Jul 2012 to 1 Nov 2015). NB: Past performance is not an indicator of future performance.

NEW WORLD FUND – SECTOR EXPOSURES

Sector	Fund weight	Stock examples	
Energy Efficiency	25%		
Clean Energy	20%		
Industrial Efficiency	22%		
Waste, Recycling, Pollution Control	11%		
Advanced & Sustainable Materials	9%		 Innovative by nature
Food & Agriculture	8%		
Healthcare Technology	3%		
Water	2%		

INVESTED IN LEADERS IN SUSTAINABLE TECHNOLOGY

Sector	Fund holdings		
Advanced materials	#1 and #2 carbon fibre manufacturers		
Advanced Manufacturing	#1 industrial laser manufacturer		
Electric vehicles	#1 supplier of EV drivetrains and mild hybrid systems #1 EV manufacturer in China		
Energy storage	#1 and #2 battery separator manufacturers		
Internet of Things	#1 manufacturer of 3D sensors #1 manufacturer of passive components		
Renewable energy	#1 and #2 Wind turbine manufacturers #1 Solar inverter manufacturer		
Robotics	#1 medical robot manufacturer #1 collaborative robot manufacturer		
Sustainable Materials	#1 in sustainable textiles #1 in bioplastic precursor		



PREDICTING DISRUPTIVE CHANGES IS IMPOSSIBLE

10 years ago there was no iPhone





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*The world is
changing.*

*Don't get
stranded.*

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