

NATURAL CAPITALISM SOLUTIONS



FINANCING A FINER FUTURE

A by L. Hunter Lovins
presentation @ NCS 2017



Conservative Shift?

I do not care how to appeal to conservatives.

Yes, market mechanisms are very powerful, but much of the neoliberal agenda is profoundly anti-human and based on flawed assumptions.

Notice what they did well, then replicate it for human centered values.

To retake politics we need a new narrative.

Transform finance

Transform Finance

Moody's credit-rating agency:

The global commitment to cut carbon pollution will
“reshape the global financial landscape in terms of
investment flows into clean energy”.

\$114 trillion in finance will be needed over the next 12 years
for the clean energy transition.



Desired Outcome

Finance

Economy



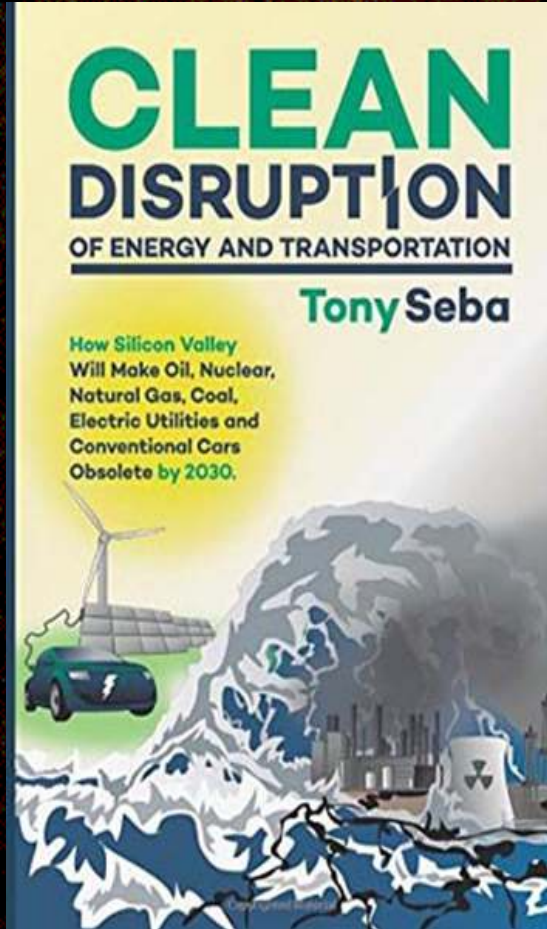
We have all the technologies we need
to solve **all** the challenges facing humanity



There are no technological or economic barriers to converting the entire world to clean, renewable energy sources. It is a question of whether we have the societal and political will.

– Mark Jacobson
Director, Atmosphere/Energy Program
Stanford University

How fast can a shift to renewables happen?



World will be **100% solar by 2030**, says Tony Seba, Stanford Professor and Silicon Valley entrepreneur,

www.tonyseba.com

2015 – Clean Disruption of Energy & Transportation

- The technologies, skills, organizations, and culture of the industrial revolution have run out of steam
- They are being replaced by the technologies, skills, organizations, and culture of the "Silicon Valley" technology revolution

1. Solar

2. Energy Storage

3. Electric Vehicles

4. Self-Driving Vehicles



- Generation, Storage, and intelligence are pushed to the edges
 - Distributed, Mobile, grid-independent
- **Bits + photons** are replacing **atoms** (coal, nukes, gas, oil)
 - Electric + ICT replacing combustion

German Economics



Germany: growing economy, declining emissions

Change of Gross Domestic Product (GDP) and Greenhouse Gas (GHG) emissions in Germany, 1991-2012

Source: BMU, BMWi, Destatis



Greenhouse
Gasses Down,
GDP Up.

Major industrial
economy now
fully engaged
in transition to
renewables

Dubai commissioned 800 MW solar
at $\sim 2.9\text{¢/kWh}$ – then 2.4¢





National
Bank of
Abu Dhabi:
Even at \$10
per barrel,
oil can't
match solar
on cost

CLIMATE CHANGE URBAN SOLUTIONS

UN Climate Change Conference

PARIS NOV 30 - DEC 11 2015

UN-HABITAT AT **COP21**

Conférence sur les Changements Climatiques 2015

COP21/CMP11

Paris, France

CLIMATE
DIALOGUES

CLIMATE
DIALOGUES

More than 1,000 cities committed to 100% renewable energy – urban environments responsible for 70% GHG and energy consumption



UBS

BMW
GROUP



Coca-Cola Enterprises

Bloomberg



PHILIPS
Walmart

M&S
EST. 1884



facebook



Goldman
Sachs



DIAGEO

MARS

DNB

H&M

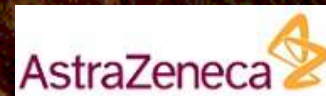
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Interface®



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MARS



PEARSON

WELLS
FARGO



Green Bonds

Apple continues to go solar.

CEO Tim Cook announced \$850 million to purchase a 3k acre solar panel farm being built by First Solar.

After Child in Chief's Paris pullout \$1.5 billion green bond



How the world has changed



Tesla is valued at more than GM – despite producing 300 times fewer cars

It's a battery company



Aliso Canyon Battery deployment



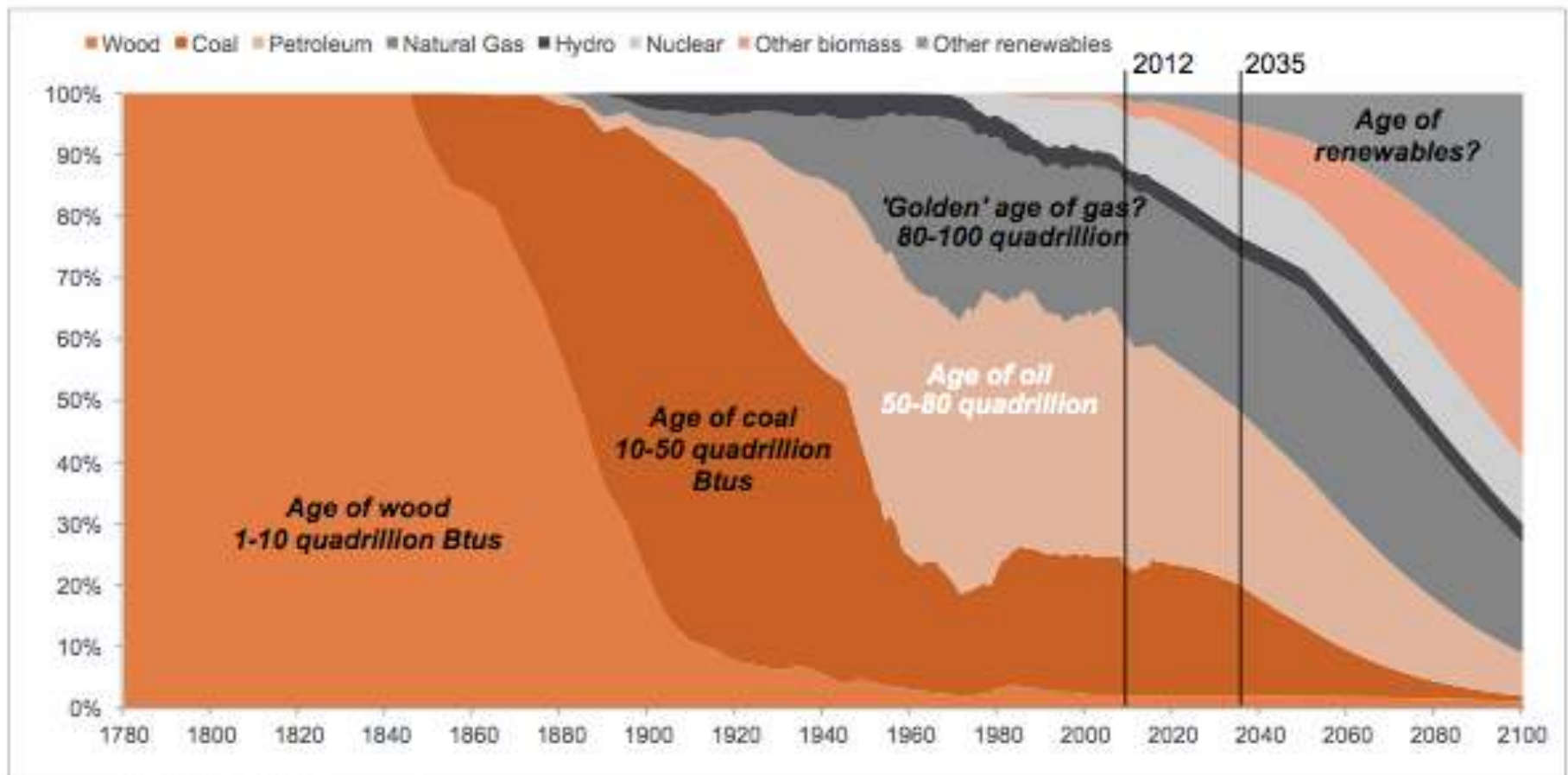
If Tony is right,
and I believe he is,
we are looking at the end of the coal, oil, gas,
uranium, nuclear, utility, and auto industries within
10 years, with the collapse starting in the next five
years.

This will be the biggest/ fastest industrial
transformation in history.

Fitch report Oct 2016: \$1.3 trillion oil assets at risk
of being stranded

“History of the energy industry tells us that change is never gradual. New technologies are embraced at the expense of incumbents.”

Figure 4. The ages of energy: History suggests a process of substitution

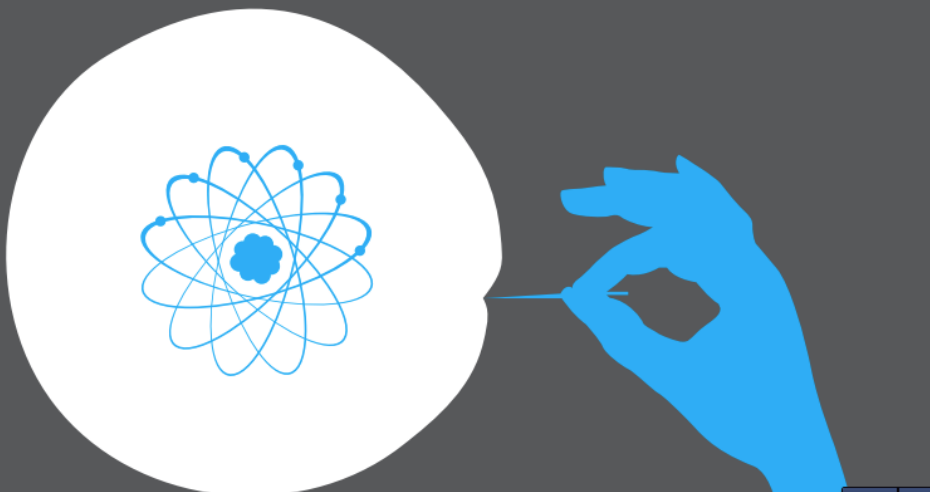


Source: IEA, EIA, Citi Research



Unburnable Carbon –

Are the world's financial markets carrying a carbon bubble?

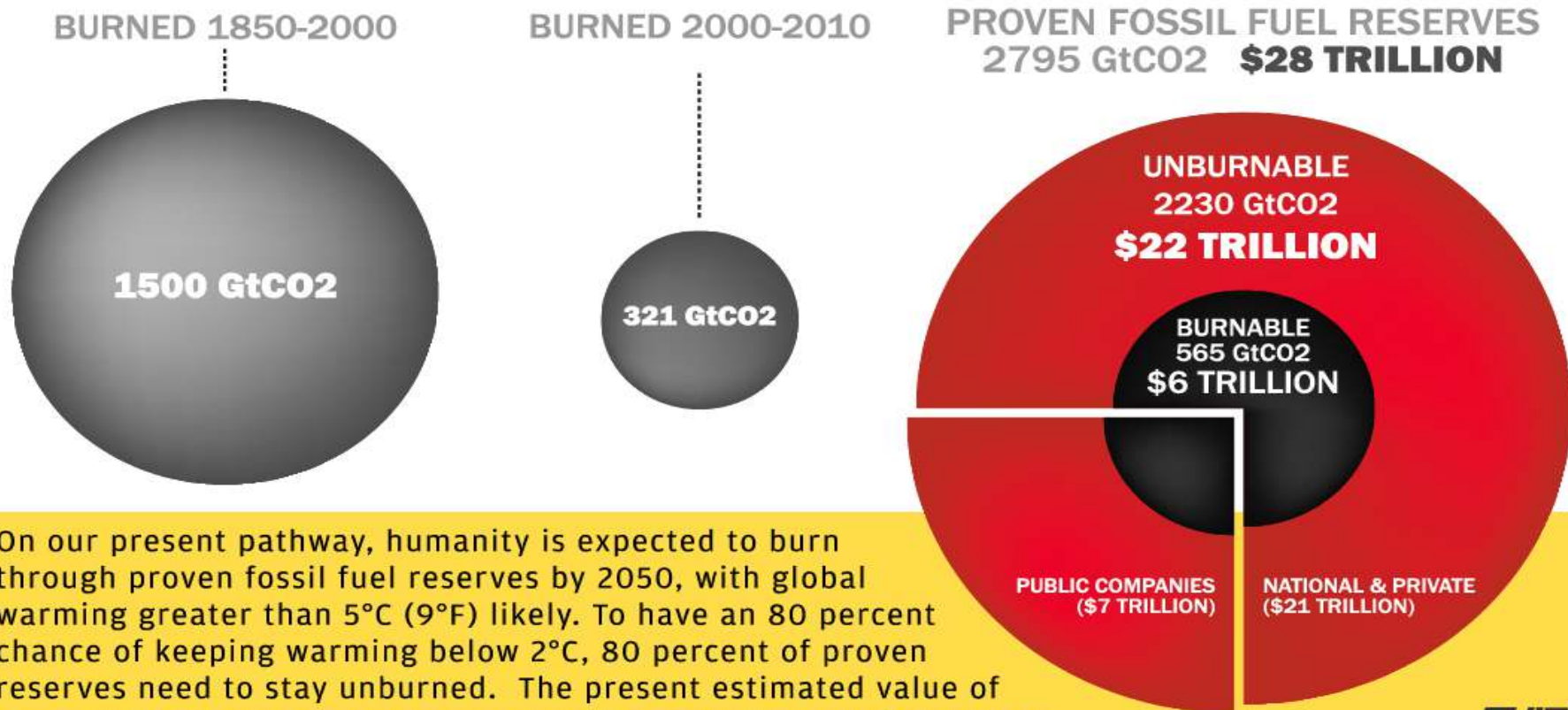


Between 60 to 80% of coal, oil & gas reserves of publicly listed companies are “unburnable” to keep within the 2° C limit.

And we continue to search for more....

Consequences: Financial Overshoot

THE **\$22 TRILLION** CARBON BUBBLE



On our present pathway, humanity is expected to burn through proven fossil fuel reserves by 2050, with global warming greater than 5°C (9°F) likely. To have an 80 percent chance of keeping warming below 2°C, 80 percent of proven reserves need to stay unburned. The present estimated value of these civilization-threatening reserves is approximately \$22 trillion.

**THINK
PROGRESS**

How to transform finance



The Fortune

1000 drives
about 50% of
the global
economy.

Their cap-ex
budget drives
half of global
impact

Nearly two-thirds of carbon dioxide & methane emissions can be attributed to 90 entities.

Half of this has been emitted since 1986



"Where capital goes over the next 15 years is going to decide whether we're actually able to address climate change and what kind of a century we are going to have"

Christiana Figueres UN FCCC

Fossil Fuels Divestment



First true fossil divestment was Matt Patsky's Trillium Asset Management – 35 years ago

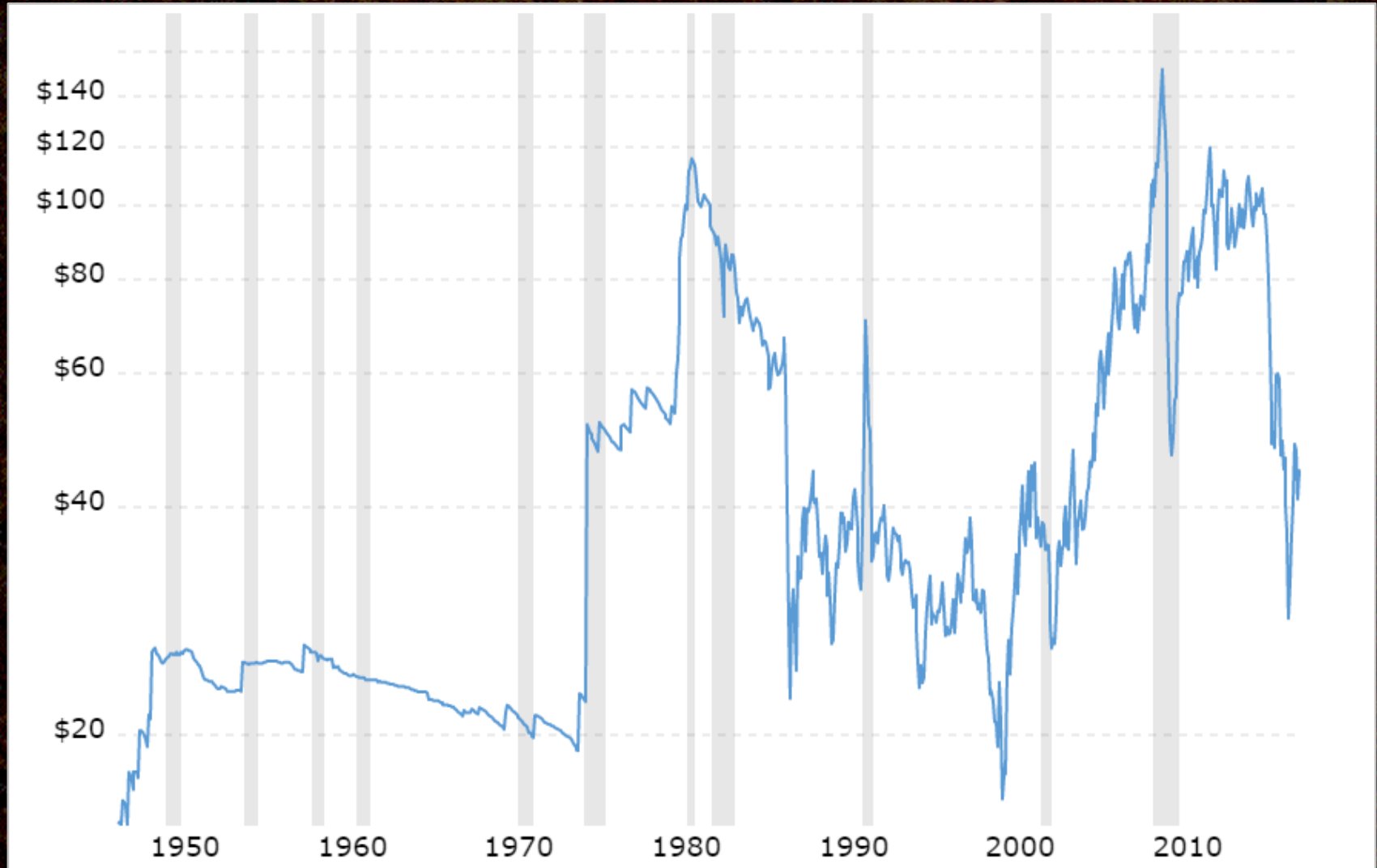
“It is entirely plausible, even predictable, that continuing to hold equities in fossil fuel companies will be ruled negligence.”

- Bevis Longstreth, former
Commissioner of the Securities and
Exchange Commission

Significance of Oil and Gas Investments

- Late 1980's seven of top ten companies in SP 500 were oil and gas
- Today, only one – Exxon Mobil
- Exxon from 70's to early 90's drove the Standard and Poors Index
- From late 1990's to 2014 led the index, no longer dominated
- Since 2014 Exxon has lagged the SP 500
- Most institutional funds hold between 1.5% and 2.0% of equities in Exxon. More in private equity and bonds.

Crude Oil Prices - 70 Year Historical Chart

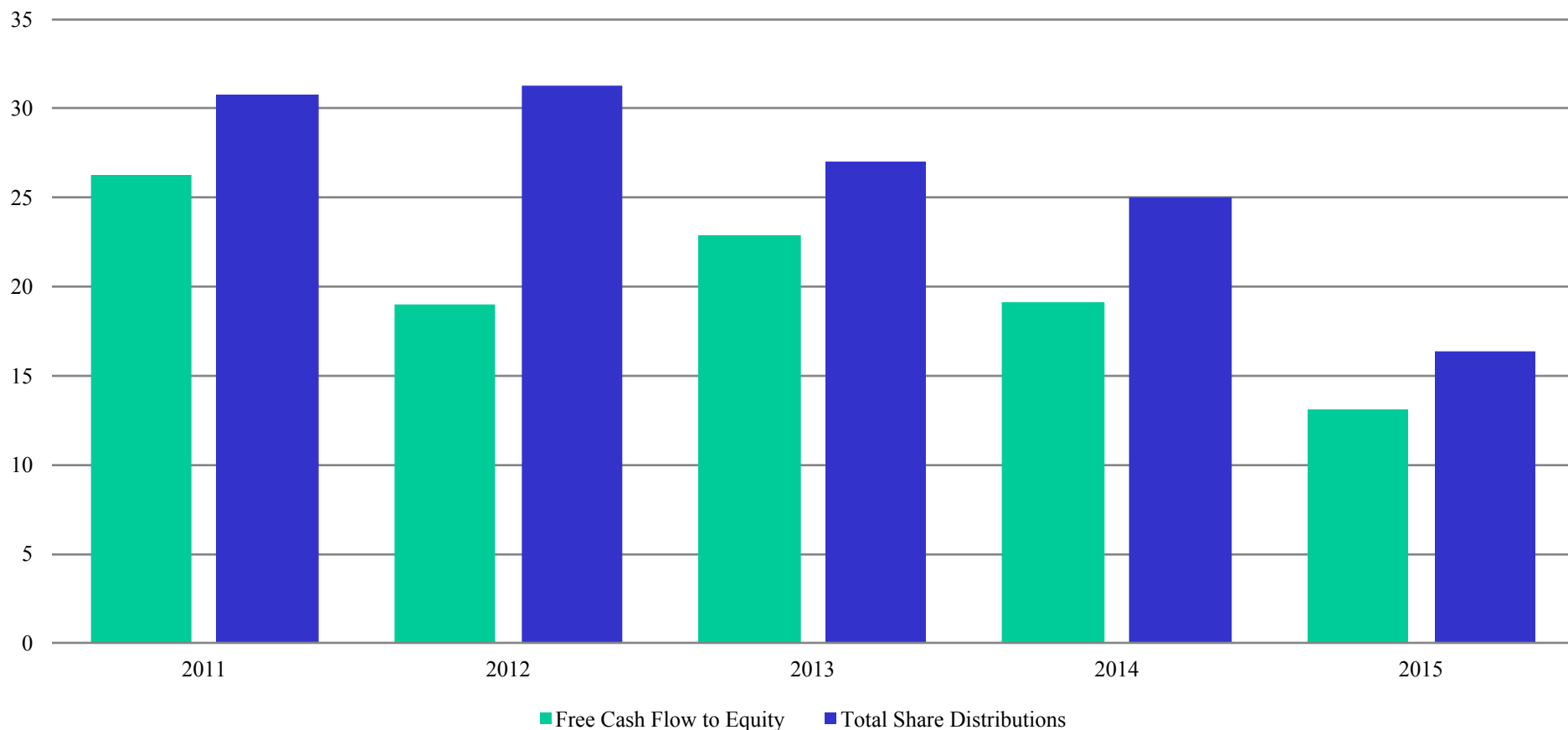


Exxon Performance 2006-2011

	Trajectory	Peaks and Troughs
Revenues	Down	2011: \$486 billion; 2015: \$268 billion
Costs of Production	Up	Conv. +100%; Oil Sands: 50%; Syn: +33%
Net Income	Down	2008: \$45 billion; 2015 \$16 billion
Debt	Up	Average 2006-2013: \$8 bil; Today: \$29 bil
End of Year Cash	Down	2007:\$33.98 bil, 2015: \$3.7
Capital Investment	Down	2013: \$34 billion; 2015: \$26 billion

Free cash flow to equity does not cover shareholder payouts

Exxon: Free Cash Flow to Equity to Total Share Distributions (2011-2015)



How Should Fiduciaries Respond?

- For large pension funds Exxon holdings between: \$500 million and \$2 billion in equities.
 - 2% of equity investment
- They also hold corporate debt and private equity. Wide variations.
- Bonds are heavily into fossil fuels
- What's inspiring you to underperform?



Deutsche Bank: solar costs, already very competitive, to fall 40% in next four years.



Grantham: Before 2030, investment growth in fossil fuels will have stopped.

Divestment

Heirs of oil magnate John D. Rockefeller



Decided Sept 2015
to divest their family
fund of fossil-fuel
Investments

\$3.4 trillion pledged to be
divested before Paris
Climate COP.

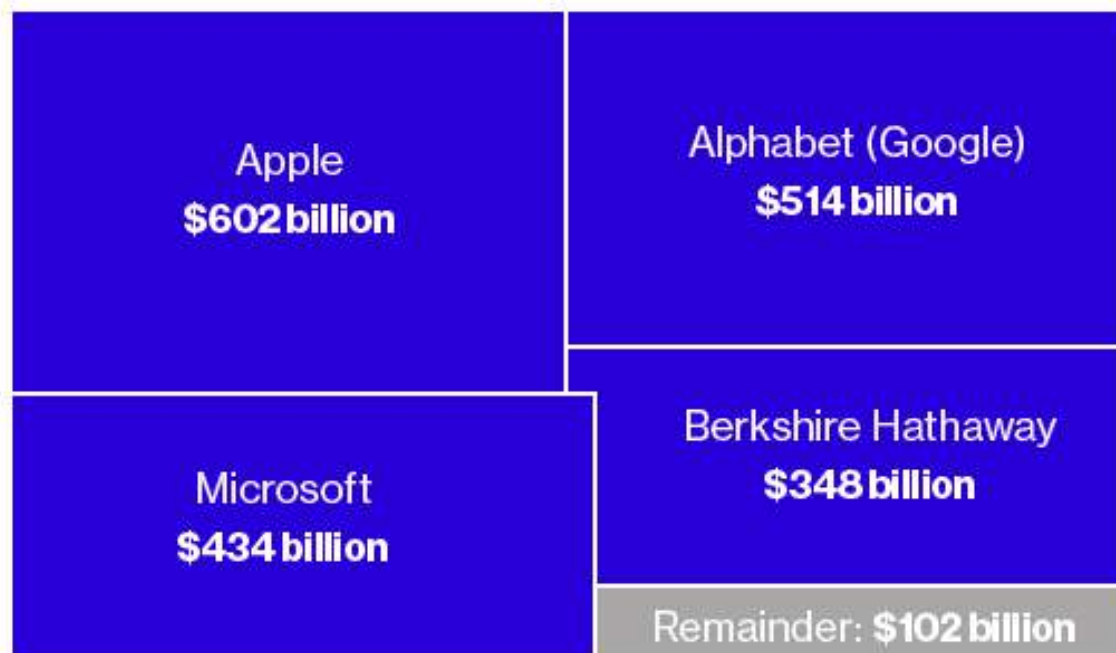
\$5 trillion and rising

Saudis announce \$2 trillion mega-fund to finance transition out of oil – plan to be world's largest solar exporter

Buying Power

With \$2 trillion in assets, the megafund could buy the four largest public companies in the U.S. — with a bit left over.

Market capitalization



2014 CDP report:

S&P 500 companies that build sustainability into their core strategies outperform those that fail to show leadership.

Corporations that are actively managing and planning for climate change secure an 18% higher return on investment (ROI) than companies that aren't

67% higher than companies who refuse to disclose their emissions.



<http://savory.global>

FACILITATING THE LARGE SCALE RESTORATION OF THE
WORLD'S GRASSLANDS





CHANGE FINANCE

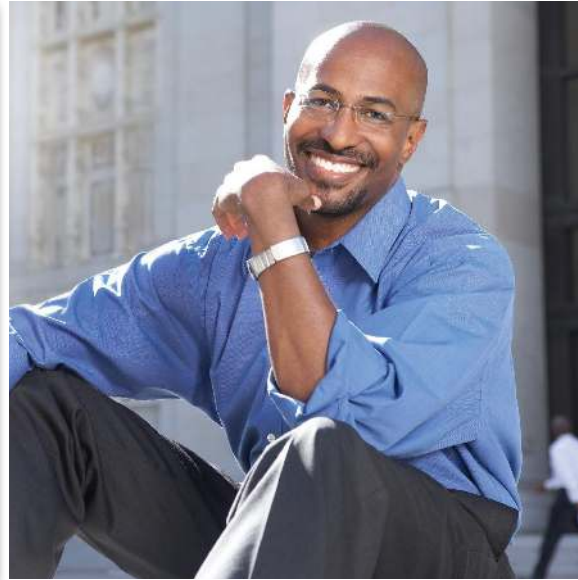
INVESTING IN SERVICE TO LIFE



Finance As Usual: 21st Century risks



CHANGE FINANCE
INVESTING IN SERVICE TO LIFE



Finance As Unusual: Mentors,
Partners and Allies are Everything



CHANGE FINANCE
INVESTING IN SERVICE TO LIFE

ETF's growing at 15–30% annually over next 10 years.

More than 500 institutions, with net assets in excess of \$5 Trillion, have made divestment commitments.

While there are more than 1,700 ETFs, only 30 are targeted to values-oriented investors. None truly fossil free

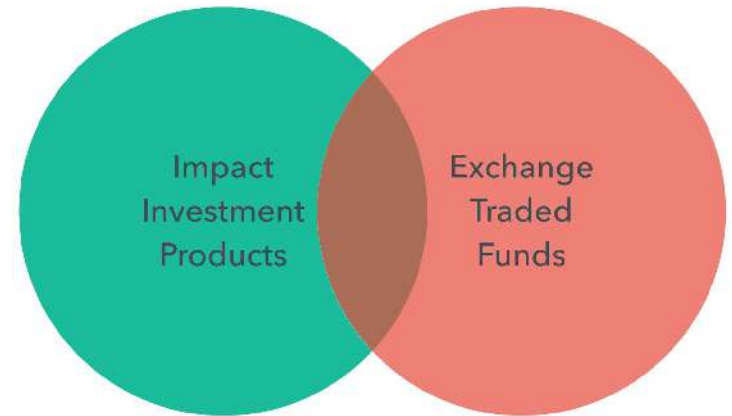
Women:

2% of Finance CEO's are Women

Women CEOs outperform the S&P by 3xs.

Millennials:

**85% of Millennials want impact from all their investments-
they will inherit ~ \$30 trillion over next decade**



Opportunity: Change Finance,
Change Everything Else



CHANGE FINANCE
INVESTING IN SERVICE TO LIFE

A finer future is possible

A world that works for 100% of humanity will arise from ensuring the dignity of all

The future is already here, it's just not widely distributed.

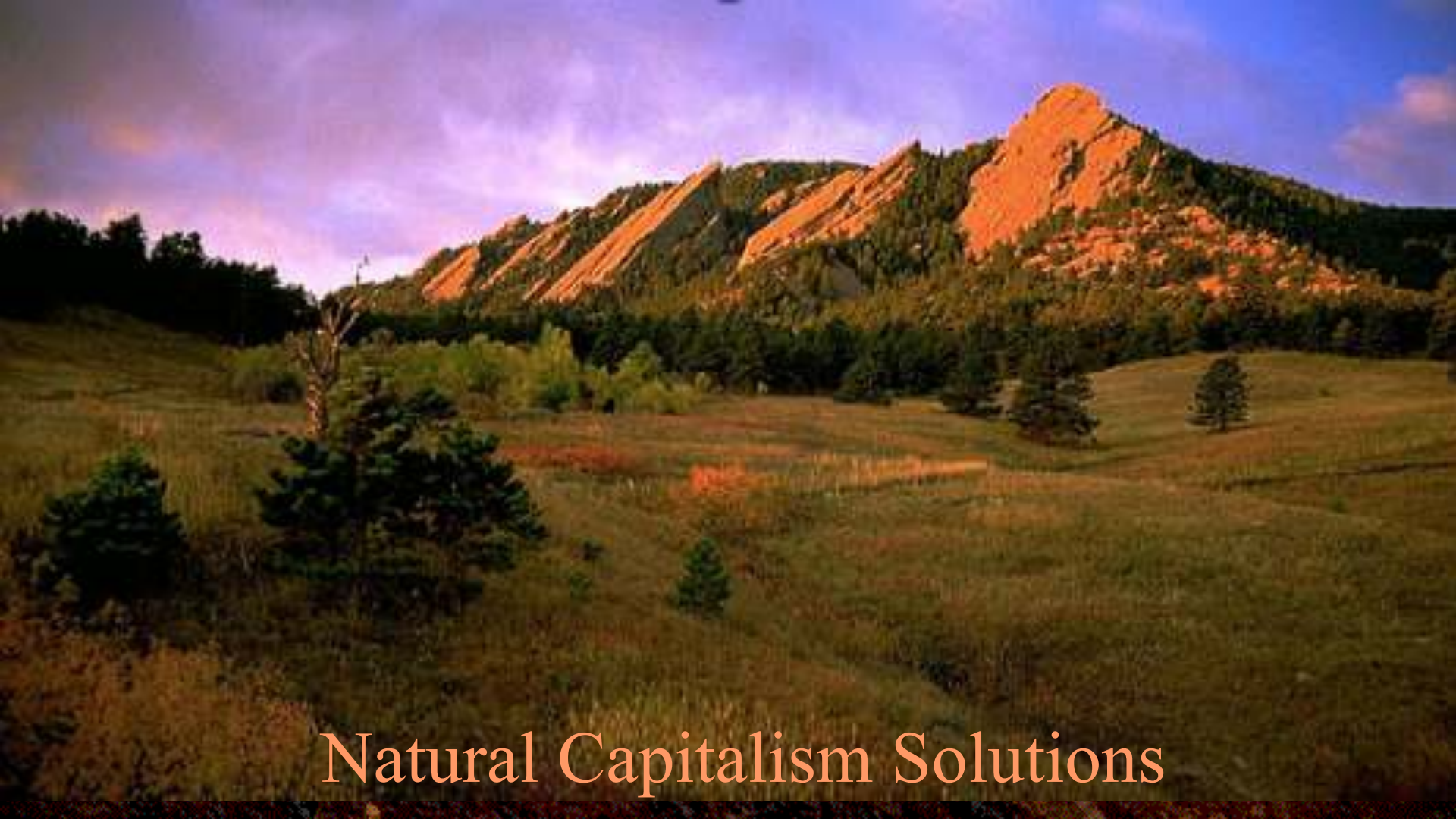
There is enormous wealth to be made transforming how we deliver energy, grow our food, finance our industries....

A successful transition requires an inspiring vision of a future of greater wellbeing, deep engagement with nature and each other. This will overcome resistance to change because people want to belong to it

We CAN redefine and reform an economy that seeks only to maximize shareholder value to an economy in service to life



Now the challenge is to build a finer future: a world that works for 100% of humanity



Natural Capitalism Solutions

Visit: www.natcapsolutions.org

A recent paper in Nature showed that to keep warming below 2 degrees C, emissions reduction is necessary, but that ways must be found to capture carbon and return it to the soil



"A mere 2 percent increase in the carbon content of the planet's soils could offset 100 percent of all greenhouse gas emissions going into the atmosphere."

—DR. RATTAN LAL, OHIO STATE SOIL SCIENTIST

nutiva®



Gabe Brown numbers

Runs cows, sheep, broiler hens (\$5 a pound for these) corn costs him \$1.35 to produce, it's now selling at ~\$3.50

Cannot keep up with demand

Started in 1993 with shallow soils, 1.3% organic matter.

In '95 started no-till, diversifying cash crop, using rotations. In 1997 focused on cover crops. In 2006 planting multi-species cover crops, mob grazing and different livestock species.

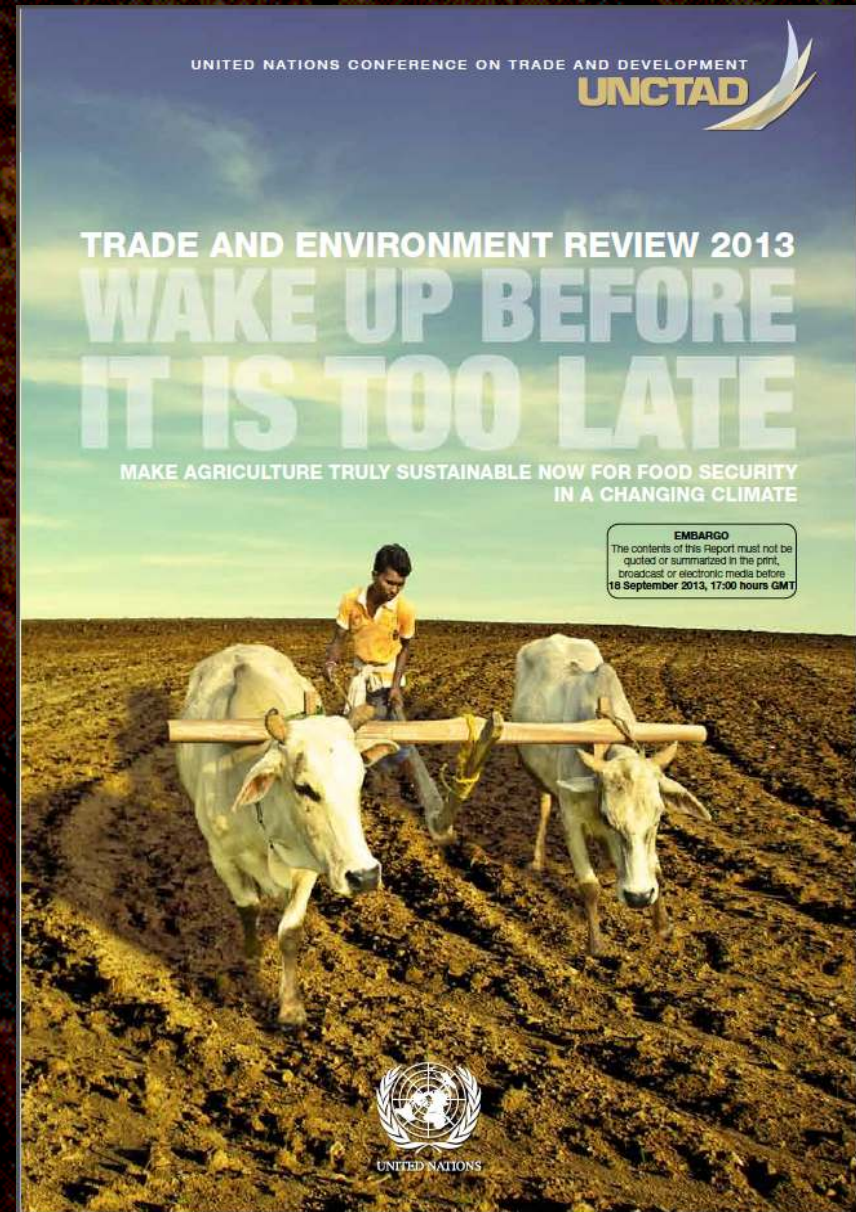
2013, have plot with 11.1% organic matter – can increase soil health fast

If healthy soil will have clean water, clean air, healthy plants animals and people – healthy ecosystem

2013 UNCTAD report

Modern industrial agriculture has not ended hunger and is particularly vulnerable to climate change

Small-holder peasant farmers could easily feed the populations of developing countries with existing labor-intensive, environmentally friendly agricultural technologies—were it not for corruption, extreme inequality, and misguided attempts to impose inappropriate “modern” crops and techniques.





CAPITAL INSTITUTE

THE FUTURE OF FINANCE



NO. 5

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EVERGREEN DIRECT INVESTING

CO-CREATING THE

REGENERATIVE ECONOMY

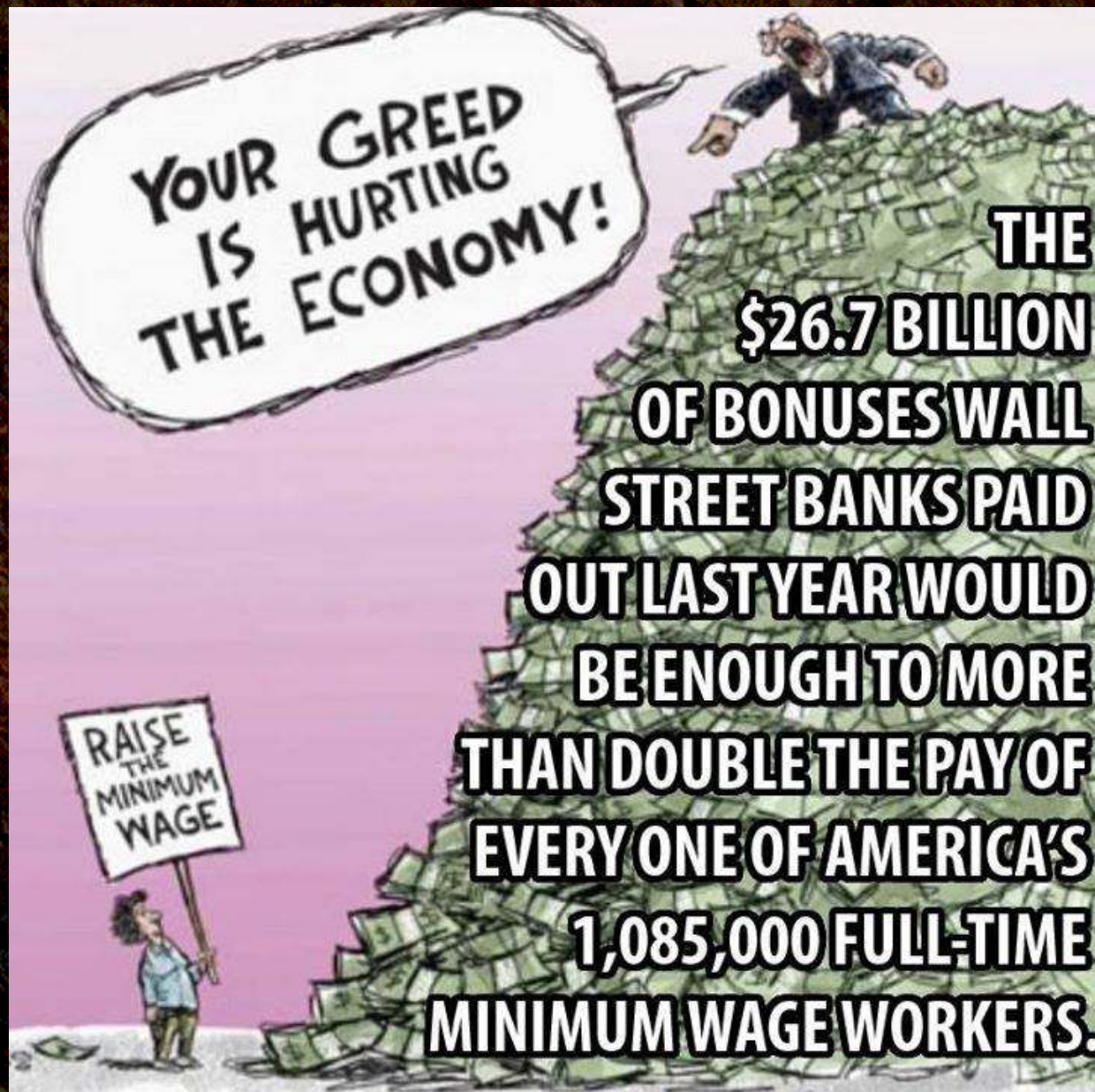
www.capitalinstitute.org

Global 1000 firms & many smaller imitators collectively hold the fate of humanity in their hands. They are trapped in the grip of short-term financial speculators and passive index investors, neither of whom are part of the, regenerative financial system we need.

Imagine big pension funds & endowments investing in and genuinely owning, with like-minded steward investors, with all associated responsibilities and benefits, 10 or 20% of real enterprises over the long run.

Financial obligations met out of enterprise cash flows, rather than “total return” of speculative portfolios of securities that are at the whim of boom - bust cycles caused by the excess of (their own) speculative capital in the system.

There's no place for self-serving interests of predatory Wall Street agents who extract endless and egregious fees though needless and non-value adding transactions: trading shares in a speculative frenzy, buying, selling, merging, leveraging, and recapitalizing companies.



**THE
\$26.7 BILLION
OF BONUSES WALL
STREET BANKS PAID
OUT LAST YEAR WOULD
BE ENOUGH TO MORE
THAN DOUBLE THE PAY OF
EVERY ONE OF AMERICA'S
1,085,000 FULL-TIME
MINIMUM WAGE WORKERS.**

The background of the slide features a close-up of the Goldman Sachs logo, which is a metallic, three-dimensional sign. To the left of the logo, a portion of the American flag is visible, showing the stars and stripes. The entire scene is set against a dark, textured background.

Goldman

The 10 largest banks in the United States are bigger today than they were before a taxpayer bailout following the 2008 financial crisis.

Growth Of Family Income

+261%

**1947-1979:
We All Grew**

**1980-2007:
We Grew Apart**



1947-1979 Source: United for a Fair Economy (www.FairEconomy.org): Based on analysis of US Census Bureau data
1980-2007 Source: Congressional Budget Office, Average Income Pretax (www.cbo.gov): 2007 Dollars

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Inequality



Almost half of the world's wealth now owned by just one percent of the population

NASA funded the HANDY Study:

Is Industrial Civilization Headed for Irreversible Collapse

The study found:

“Cases of severe civilisational disruption due to "precipitous collapse - often lasting centuries - have been quite common.”

Population, Climate, Water, Agriculture and Energy were the key interrelated factors that explain civilisational decline, and may help determine risk of collapse today

The study sought to understand long-term behavior not make a short term prediction, but its warning is stark.

Two crucial social features drove collapse:

“...the **stretching of resources** due to the strain placed on the ecological carrying capacity”; and

“...the **economic stratification** of society into Elites [rich] and Masses (or "Commoners") [poor]"

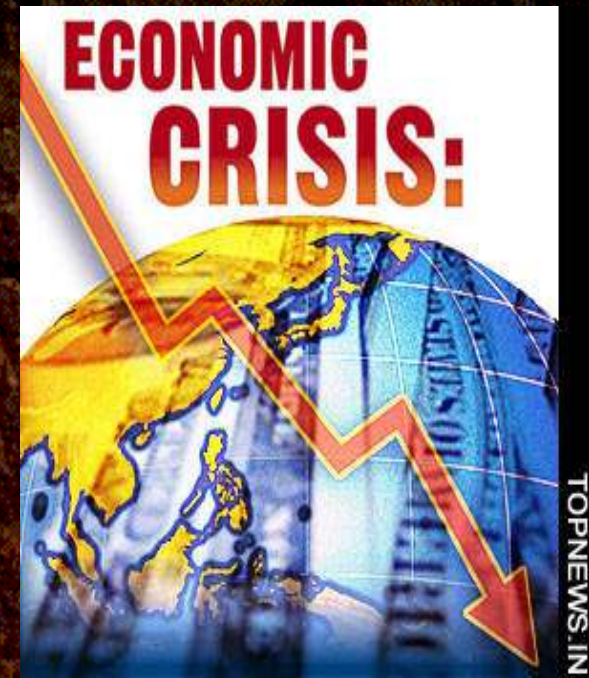
These social phenomena have played “a central role in the character or in the process of the collapse,” in all such cases over “the last five thousand years.”

The study concluded :

Under conditions "closely reflecting the reality of the world today... we find that collapse is difficult to avoid."

But it observed:

"Collapse can be avoided and population can reach equilibrium if the per capita rate of depletion of nature is reduced to a sustainable level, and if resources are distributed in a reasonably equitable fashion."



Poverty is not an accident.
Like slavery and apartheid,
it is man-made and
can be removed by
the actions of
human beings.

- Nelson Mandela

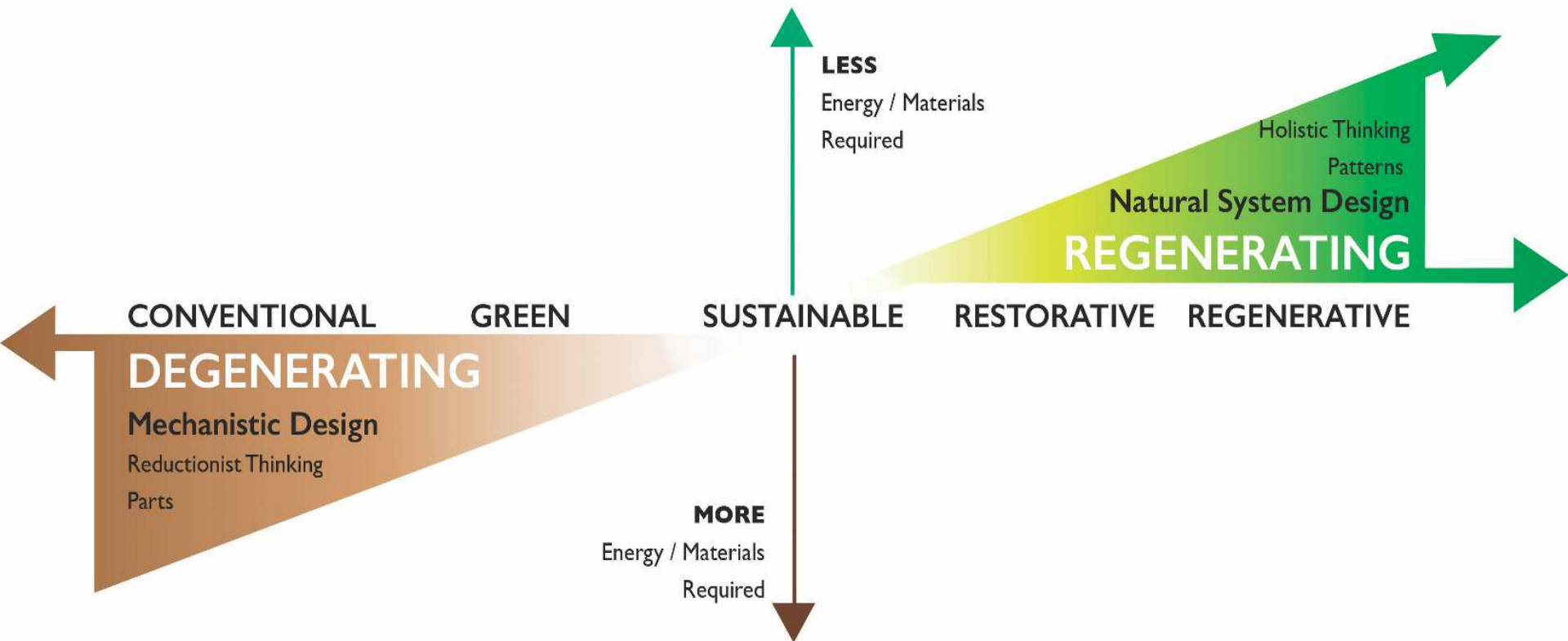


Natural systems are sustainable

because they are Regenerative

AN ECONOMY

Place - Culture - Enterprise - Government - Commons





In New York City

MBA in Sustainability

Low residency

High impact



Forbes / Entrepreneur

AUG 9, 2015 @ 01:27 PM 4,608 VIEWS

Something's Fishy In Brooklyn: Verticulture Wants To Raise Tilapia On A Rooftop Near You



Robin D. Schatz
CONTRIBUTOR

I write about food and farm ventures, from high-tech to homespun.

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Verticulture's Partners, from left to right: Miles Cretien, Ryan Morningstar, Jacob Hill, Peter Spartos.

New. Track your recent FICO® Credit Scores. For Free!*

Plus, see key factors online.



THIS AND MORE >

*See FICO® Credit Score Terms

Refusal to report quarterly

The ultimate cost of short-termism was the financial crisis of 2008-9. 'Too many investors have become short-term gamblers: the more fluctuations in share price they can engineer, the better it is for them. It is not good for the companies or for society, but it is influencing the way firms are being run, all the same.... To drag the world back to sanity, we need to know why we are here. The answer is: for consumers, not shareholders. If we are in synch with consumer needs and the environment in which we operate, and take responsibility for society as well as for our employees, then the shareholder will also be rewarded'



Paul Polman

Unilever's Sustainable Living Plan:



Cut environmental impacts in half
by 2020,

Source 100% of agricultural
materials sustainably, and

Help more than 1 billion people
improve their health and well-
being.



16 February 2017
3G and Warren Buffett
launch raid. Unilever
shares soared 13%

17 February 2017
Paul Polman rejects \$143 billion bid

On one side Unilever CEO Paul Polman champions sustainable growth in earnings to raise long-term shareholder value. On the other side KHC and its Brazilian owner 3G advocate maximizing short-term earnings to increase near-term valuation

Winning alone is not enough. It's about winning with purpose.

Paul Polman



Unilever's purpose driven brands are twice as profitable as others

Responsible for half of the company's 2015 profit

Stock had been at all time heights



Thomas Berry says:

“We are in trouble just now because we do not have a good story....

The old story - the account of how the world came to be and how we fit into it...sustained us for a long period of time. It shaped our emotional attitudes, provided us with a life purpose, energized action. It consecrated suffering, integrated knowledge, guided education....

We need a (new) story that will educate man, heal him, guide him”



Each person must see himself as though the entire world were held in balance and any deed he may do could tip the scales

Maimonides



...there is no more strategic issue for a company, or any organization, than its ultimate purpose. For those who think business exists to make a profit, I suggest they think again. Business makes a profit to exist. Surely it must exist for some higher, nobler purpose than that.

— Ray Anderson —

AZ QUOTES



Ray Anderson's
showed that his
commitment to
sustainability
enhanced every aspect
of shareholder value

Who is
responsible?



Winner of the "Not My Job"
Award - ADOT
Litchfield Park, AZ 85

Is sovereignty obsolete?



If we insist on ruining the planet,
we have to stop calling ourselves
an intelligent species





Dr. Sylvia Earle:

“What we do in the next ten years is more important than what humanity does in the next 10,000 years”





David Brower:

What do we want the earth to be like fifty years from now? Let's do a little dreaming.

Aim high! Navigators have aimed at the stars for centuries. They haven't hit one yet, but because they aimed high they found their way

People matter:

- Alliance focused on what people need and want to innovate and produce
- Increased office capacity from 120 people to 260
- Doubled revenue
- Increased appraised value from \$6 million to \$14 million
- Held events for 30,000 people last year, all of which spread the mission – politicians who want the environmental community all came to the Alliance

Design for human productivity

We need to design for well-being

We are only getting a clue on how to do this

Well-being is where greenbuilding was 15 years ago – if you sold lights, then CFL's were the solution, if you sold AC then HVAC was the solution.

The industry now sells standing desks and non-toxic furniture and calls it wellbeing



SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



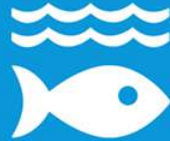
12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



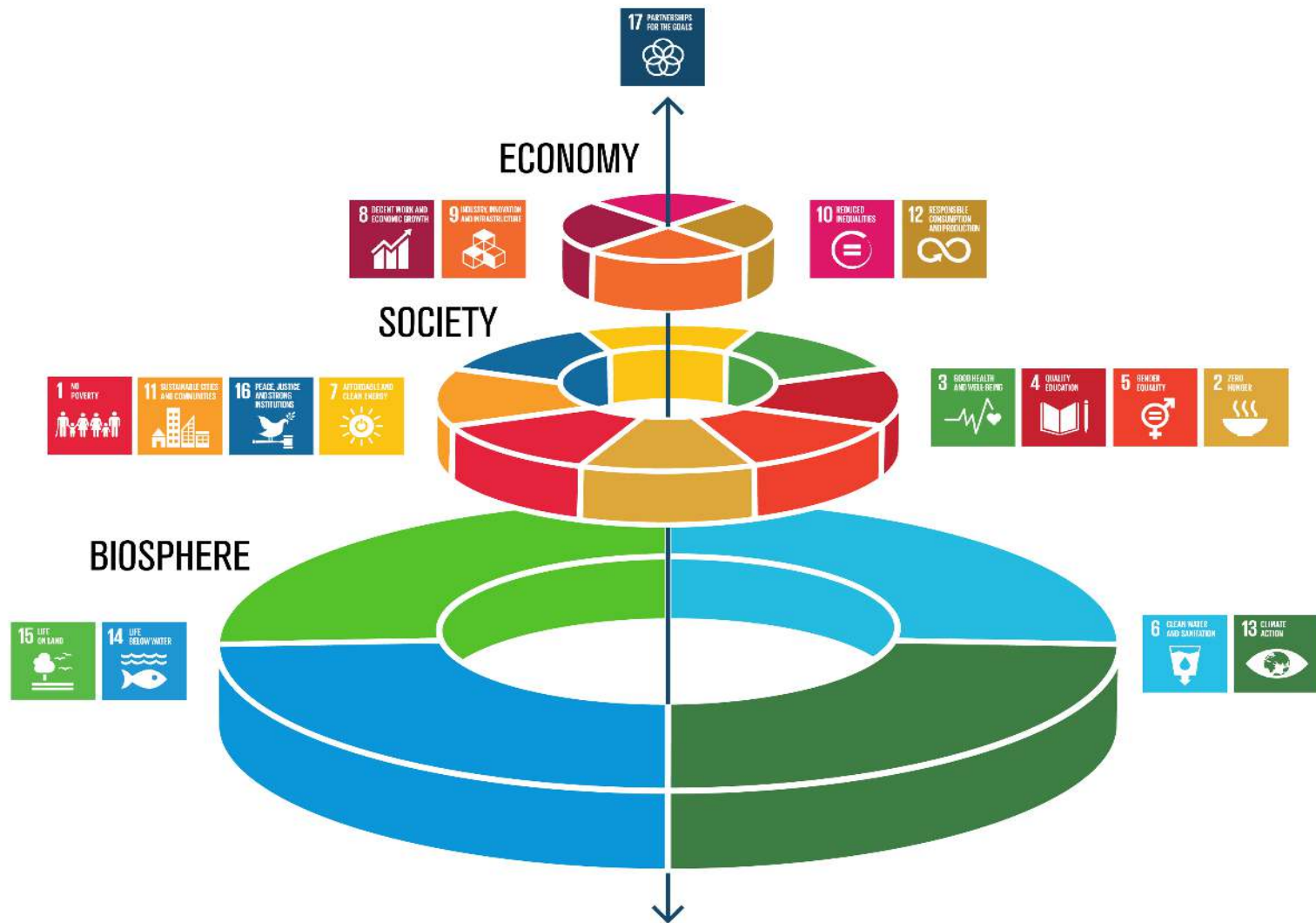
16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



SUSTAINABLE DEVELOPMENT GOALS



Graphics by Jerker Lukrantz/Åzote

The Sustainable Development Goals may be best met by focusing first on how we feed everyone on earth



B. Smaller

"What would you suggest to fill the dark, empty spaces in my soul?"

Normal is getting dressed in clothes that you buy for work and driving through traffic in a car that you are still paying for - in order to get to the job you need to pay for the clothes and the car, and the house you leave vacant all day so you can afford to live in it. ~ Ellen Goodman

