THE GREEN ECONOMY BAROMETER 2016



"GEC gives 4 out of 10 to the transition"



About the Green Economy Coalition

The Green Economy Coalition (GEC) is the largest global alliance of organisations working on a green economy. The membership spans Asia, Africa, South America, North America and Europe and represents a wide range of interests including the poorest, the environment, business, UN, research and government. Despite our diversity, the Coalition is committed to accelerating the transition to green and fair economies

www.greeneconomycoalition.org

About this report

Since 2010 the GEC has been tracking the transition to green economies. We do this by drawing on the experiences and insights of our members, gathering different perspectives from different regions. This is by no means an exhaustive exercise. Rather, it aims to provide a brief but broad picture of what has been happening recently and where. It is focused on the five principles of change that define the GEC's understanding of a green economy; 1. Economics for nature; 2: Green must be fair; 3. Transforming economic sectors; 4. Moving the money; 5: Measuring what matters. We would welcome further insights as to how the transition to greener economies is playing out in your country or sector.

In brief

The transition has moved up a gear. Business is more alert to the risks of natural capital depletion than ever before; the market has responded to the opportunities for innovation; and the international policy architecture has matured. More than twice the amount was invested in renewables as it was in oil and coal last year.

The transition has tipped towards developing countries.

Total investment in renewable power and fuels in developing countries in 2015 exceeded that in developed economies for the first time in history.

Sector 'hotspots' have emerged. Due in part to the UNFCC process, governments and businesses are setting themselves more ambitious sector targets than ever before. Sweden, Costa Rica and Germany have committed to go carbon neutral; India has promised to make all cars electric; Norway has vowed to be the first country to be 'deforestation free' and to go carbon neutral by 2030; China's installed renewable energy capacity is bigger than in the rest of countries around the world combined.

But the transition is not broad enough or deep enough: Poverty persists and the environment still degrades. The gap between the rich and the poorest is growing.

- Most national plans focus on specific sectors without considering the economic levers to unleash a broader transformation.
- Too few strategies assess the impact of green growth policies on the poorest or marginalised.
 More specifically, the informal economy – where the majority of the world's poorest trade, work and live - has been forgotten in green economy planning processes.
- Green technologies are not well adapted to the poorest countries or communities.
- Numerous natural and social capital accounting methodologies are being developed - many in isolation from each other – but they have had little impact.

The opportunity of transition is still not reaching people: The dimensions of a transition speak to many core issues including jobs, industry, health, growth, housing, food, energy, climate, housing, cities. Yet, the vision and opportunities of a green economy are still remote to most voters.

Political discourse remains fringe: While there are many discreet sectoral plans and strategies evolving, the language of a green economy is far from the political mainstream. In many countries, activity on the green economy is happening in spite of government intervention rather than because of it.

4 out of 10: The transition to green economies needs to be broader, deeper and more inclusive. It needs to focus on structural reform and ensure societal ownership of its means and benefits.

Going forward

For government: The prospect of a green economy offers much wider benefits than energy policies alone. Those benefits need to be defined with and identified by communities and electorates; and political narratives need to respond directly to people's needs, fears and ambitions. Particular attention needs to be given to ensuring that technologies are appropriate and accessible for the poorest groups; and that small and informal enterprises are included in green economy planning processes.

For business: The transition to a green economy is happening quickly. New markets are emerging. Successful business will create value across a range of capitals. They will invest in circularity and innovation. They will proactively support government green economy policy.

For civil society: No enduring economic, cultural or political transformation has been achieved without a solid constituency demanding and enabling that change — changing the narrative, changing the power base. It is the job of civil society to amplify people's aspirations and necessities to decision makers at all levels. We invite organisations who share this common mission to join the GEC.

Introduction

'transition' (n)(v)

The process or a period of changing from one state or condition to another:

from Latin transire to 'go across'.

There have been some pivotal moments in history when human progress has shifted from one state to another: the agricultural revolution, the industrial revolution, globalisation, etc. (see Figure 1). What is the evidence that we are now in transition – moving across from 'brown' economic growth (founded on fossil fuels and intensive use of natural resources) to 'greener' growth?

A look back

To assess the status of the transition it is worth looking backwards. By 2000, the UNFCCC had only been in force for six` years and solar panels costed \$8/watt; the Global Reporting Initiative had been founded three years earlier and the language of social or environmental 'sustainability' barely featured on boardroom agendas.

Now, 16 years on, much has changed. The environment and inequality have been in the top 'global risks' identified by the World Economic Forum for the last five years; all countries have committed to taking action on climate change; the interlinkages between environmental, social and economic issues has been underscored by the UN Sustainable Development Goals; and the market has got to work (solar panels are now 0.30c/watt). The transition is not only underway, it is speeding up.

The opportunity

What makes the green economy transition distinct from other efforts to conserve the natural world is that it is one of structural reform. As well as averting natural system collapse, the transition is a chance to restructure our economies based on current knowledge rather than historical assumptions; namely, that growth can be infinite or that it will always trickle down to those who need it most; and that investing in the environment will undermine growth or social progress.

The green economy transition is also distinct because it is one of opportunity. If social justice is put at the front of the transition, then this is a transformation that can help the lives of the poorest and most marginalised. It can bring new sources of wealth and investment; alternative jobs and sectors; and ultimately an economic system that is more resilient to withstand financial shocks and natural disasters.

The green economy does not provide all of the solutions to a globalised economy. But, it provides a positive vision and a set of practical responses in a language that decision makers can understand; and it opens up a political space for citizens and civil society to shape economic decision making.

The blockages

Yet the discourse of a green economy is still remote from public and political discourse. What does a green economy offer people concerned about rising bills and static wages; or over-stretched public services and declining industries; or falling confidence in government and growing insecurity of income, housing and savings? What does a 'green job' mean for the poorest in Dhaka or the unemployed worker in Detroit? How does it match people's aspirations for a better life? Until the transition can emerge from, and respond to people's concerns it will not take hold at scale (Figure 2).

In 2014 the GEC focused on the 'Story of Transition'. We looked at different ways of communicating to help people and communities identify with transition. This year, the GEC Global Meeting is focused on the issue of **political transformation**: What are the political narratives that are helping voters to connect and engage in a vision of a transition to green economies?

Drawing from the insights of the GEC membership this paper tracks the status of the transition in the last two years particularly; and hones in on sample political narratives that are being championed in different contexts to drive change.

Figure 1: Five Major Industrial Cycles (Source: FTSE Russell)

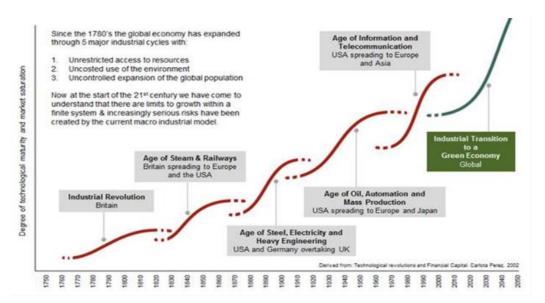


Figure 2: Indicative milestones for a green economy transition (Source: Steve Bass, Senior Fellow, IIED)



I. Global snapshot of the transition:

Much to celebrate...

1. An international architecture: Governments have agreed on the first-ever universal, legally binding global climate deal; and all countries — richer and poor — have committed to a set of global Sustainable Development Goals (SDGs), that set out a pathway to more sustainable economies.

Intergovernmental organisations have scaled up their work in-country: the Global Green Growth Institute (GGGI) is working with 19 governments; UN Partnership Action for a Green Economy (PAGE), is working in direct partnership with 8 governments on their transition; the OECD continues to carry out research and support governments make the transition. The wealth of information on the Green Growth Knowledge Platform (GGKP) is testament to the scale of activity on the agenda.

2. National sectoral plans have become more ambitious: In part due to the UNFCCC process, governments have committed to more ambitious sector based targets than ever before. Sweden, Costa Rica and Norway have all vowed to be carbon neutral in the coming thirty years. Even oil and coal producing countries are shifting: China's Five Year Plan leaves no big hopes for coal and Saudi Arabia announces its plans for a post-oil era.

THERE ARE OVER 65 GREEN ECONOMY NATIONAL PLANS.

3. Markets have responded: Investors and businesses are responding to the new opportunity offered by the transition. 147 Gigawatts of

renewable electricity came online in 2015 - the largest annual increase ever and as much as Africa's entire power generating capacity.

MORE THAN TWICE AS MUCH MONEY
WAS SPENT ON RENEWABLES THAN ON
COAL AND GAS-FIRED POWER
GENERATION IN 2015 (\$130bn)ⁱ.

4. **Investment is flowing**: 'Green finance' is flowing from new directions including central banks, development banks, business, city governments and the capital markets.

US\$ 6.22 TRILLION GOING TOWARDS

THE GREEN ECONOMYⁱⁱ

2015 WAS A RECORD YEAR FOR GREEN BONDS^{III}

5. Some specific conservation triumphs: There is an overall <u>positive trend</u> among populations of almost 1,000 bird and mammal species across much of the northern hemisphere.

...but structural reform is still far off.

1. **People are being left behind**: This transition still risks leaving behind countries in Africa and parts of Asia and the Americas where inequality and extreme poverty are widespread. Green technologies are still ill-suited for poorer countries.

Green growth initiatives tend only to focus on specific sectors rather than economic transformation.

8 OF 12 HIGH GROWTH COUNTRIES ARE DECLINING ON THE HUMAN
DEVELOPMENT INDEX^{iv}

- 2. **Natural systems are still depleting:** We are on course to miss most of the international community's "Aichi Targets, adopted in 2010 under the Convention on Biological Diversity (CBD).
- 3. **Reform of the capital markets is slow:**Despite the financial crisis, the reform of the capital markets has been slow and short-termism reigns.

II. Closer look at the transition:

Are we protecting natural systems better?

HIIGHLIGHTS

Business see the value of biodiversity: Thanks to the tools and metrics being developed to value natural capital biodiversity loss is now seen as a material risk for many companies. For example, the Natural Capital Coalition's 200+ members launched the 'Natural Capital Coalition Protocol', which offers a standardized framework to identify, measure, and value impacts and dependencies on natural capital.

Governments see value of biodiversity: A recent update to the IUCN Red List reports that conservation action has bolstered populations of some key species. There are some encouraging signs of more joined up thinking. For example, Kenya's five-year strategy to integrate the conservation of genetic resources into national climate change adaptation planning and strategies.

Example: Having conducted natural capital assessments, the Chinese government is using zoning to protect 28 percent of the country's natural capital asset and is paying 200 million people to perform restoration and

conservation activities.

Progress in pricing externalities: A group of over 80 leaders from national and regional governments, and over 1000 businesses and investors, representing 52% of global GDP, signalled their support for pricing carbon - the Carbon Pricing Leadership Coalition

Example: Dutch Company Royal DSM has put a so-called internal price on carbon of EUR50 per ton of CO2 (2016) to 'future proof' the business by changing the mind-set when reviewing large investment decisions.

REVENUES FROM EMISSIONS TRADING SCHEMES AND CARBON TAXES ROSE BY 60 PERCENT IN 2015^v

13% of greenhouse gas emissions now covered by Carbon Pricing Initiatives^{vi}

LOW-POINTS

Valuation is not translating to action: Most companies are not prepared to expose their results publicly due to reputational risk, especially those with a large footprint Governments are reluctant to regulate.

ONLY 4 OF THE FTSE 100 COMPANIES MENTION NATURAL CAPITAL IN THEIR COMPANY REPORTS^{VII}

Questions over valuating methods: There are a multitude of natural capital valuation methodologies being developed in isolation and without adequate scrutiny from other stakeholders – particularly the communities themselves. As stressed by many civil society groups, not all value can be put on a balance sheet; and many fear that 'valuation' will lead to marketization.

Are people's lives improving?

HIGHLIGHTS

Greater understanding of pro-poor green growth strategies. In the last two years there has been a marked emphasis on the part of international institutions, civil society and researchers focusing on the outcomes of green growth for the poorest and marginalised. There is now a better theoretical understanding of how green policy making can help to improve the lives of the poorest, though there are still many questions still unanswered.

FOR THE FIRST TIME IN HISTORY, TOTAL INVESTMENT IN RENEWABLE POWER AND FUELS IN DEVELOPING COUNTRIES IN 2015 EXCEEDED THAT IN DEVELOPED ECONOMIESVIII

Example: Bangladesh now has the largest national off-grid electrification program in the world. Starting in 2003, with connections for around 11,000 households, the program is now connecting over 850,000 households to safe solar power every year.

I OW-POINTS

Few 'green jobs' studies in developing countries: While many estimates have been made about the job potential in rich countries, there is a lack of evidence of how green jobs can be realised in developing countries.

Poverty is multi-dimensional and persistent: Few of the Least Developed Countries have graduated. Despite economic growth, the number of people living in slums around the world is increasing, and the informal economy is increasing in both rich and poor countries.

UP TO 80% OF PEOPLE IN THE POOREST COUNTRIES EARN THEIR LIVING IN THE INFORMAL ECONOMY^{ix}.

6 of 8 global risks are connected to poverty and environment^x.

Renewable energy is not keeping up with demand in poor countries. According to the latest <u>data</u> from the World Bank, more poor people are gaining access to electricity at a faster rate than ever before. But the share of renewable energy is not growing at the same speed.

Are capital markets and investment flows shifting?

HIGHLIGHTS

China takes leadership role on green finance:

G20 Finance Track launched in 2016, co-chaired by representatives from the Bank of England and the Peoples Bank of China, have been tasked with identifying developments that would increase the flow of green finance. 2015 saw an increase in the number of large banks active in the renewables sector and an increase in loan size, with major new commitments from international investment firms to renewables and energy efficiency^{xi}.

"Green finance cannot be niche' Mark Carney, Governor of the Bank of England, IMF 2015

'China will advance green finance during its presidency of the G20 in 2016'. Yi Gang, Deputy Governor, People's Bank of China, IMF 2015

Investors vying for green finance: New

investment vehicles – including green bonds, crowdfunding and yieldcos – expanded. Green bonds had another record year. The top 3 types of issuers are development banks (44%), corporate (33%) and municipal governments (13%).

Mainstream financing and securitisation structures also continued to move into developing country markets as companies (particularly solar PV) and investors sought higher yield, even at the expense of higher risk.

The European Bank for Reconstruction and Development (ERBD) <u>Transition approach</u> which will increase the level of our financing in the sphere of sustainable resources to some €18 billion over the next five years.

Figure 3: Issuance of Green Bonds (Source: Climate Bonds Network)



LOWPOINTS

Remit of 'green finance' unclear: Definitions of green finance remain blurry. In most cases, investments refer to renewables or resource efficiency, and there is no information about the social implications of green investments. There is no clarity as to whether these new and additional sources of green finance will be available to SMEs or if they will reach the poorest.

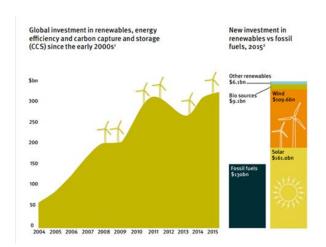
Are sectors being transformed?

HIGHLIGHTS

Developing countries take the lead on energy

transitions: Poorer countries are showing more progressive on developing renewable energy policies than rich countries (Figure 5). Jamaica, Honduras, Uruguay and Mauritania were among the highest investors in renewable energy relative to their GDP.

Figure 4: Global investment in renewables, energy efficiency and carbon capture and storage (Source: Green Alliance)



Nations set increasingly ambitious sector targets: The German and Indian governments have committed that by the year 2030, all new cars registered must be electric vehicles. Sweden has committed to being carbon neutral by 2045; Costa Rica repeated its goal to be carbon neutral by 2021; Norway is aiming for 2050. Italy has introduced a Green Economy Law that contains provisions on environmental impact, waste management, sustainable transport, and protected marine areas.

India commits to provide electric cars with zero down payment to become a 100% electric vehicle nation by 2030^{xii}

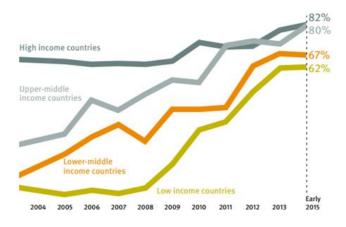
LOWPOINTS

Sector plans are narrow: Green growth sectoral plans do not often relate to the broader project of economic reform and do not sufficiently consider the impact on the poorest – particularly those working in the informal economy.

80% OF THE WORLD'S POOREST
POPULATIONS LIVE, TRADE AND MAKE
THEIR LIVELIHOODS IN INFORMAL
MARKETS. YET ONLY A TINY MINORITY OF
GREEN GROWTH NATIONAL AND
SECTORAL PLANS MAKE ANY MENTION OF
THE INFORMAL ECONOMY^{XIII}.

Figure 5: Proportion of countries with renewable energy policies

Proportion of countries with renewable energy policies³



Are we measuring progress in new ways?

HIGHLIGHTS

SDGs prompt rethink: The SDG framework is proving useful to decision makers at any level – local, global, corporate - to help them understand the risks, opportunities and interdependencies of issues facing human development. Investors, business and national governments have started to benchmark their progress against the Goals.

Example: Institute of Chartered Accountants in England and Wales (ICAEW) sees the SDGs as a 'clear and compelling articulation of public interest'. ICAEW aims to support all of its 145,000 chartered accountants to help businesses value public goods and support them to measure progress in alternative ways.

Beyond financial reporting: For example, in 2015 the London Stock Exchange announced requirements of carbon disclosure for listed companies. The Carbon Disclosure Project (CDP) has been representing 767 institutional investors holding US\$492 trillion in assets to obtain carbon performance data from thousands of companies to help reveal the investment risks and facilitate their investment decision.

EXAMPLE: In France a new Energy Transition Law means that investors need to disclose how they manage sustainability factors, carbon footprint and contribution to the energy transition; and banks are to incorporate climate factors into stress tests.

LOWPOINTS

Accounting frameworks still disconnected and remote: Numerous natural and social capital accounting methodologies are being developed - many in isolation from each other - that have had little input from civil society or the communities that they will impact.

iii. The politics of transition

The public wants change: Recent polls suggest that, despite increased economic uncertainty, environmental and social issues are still high on the list of people's concerns:

- Europeans see ISIS, climate change, economic instability and cyberattacks as the biggest threats to their lives (Pew Research Centre, Spring 2016 Global Attitudes Survey);
- In the US, the majority of people consider environmental protection as more important than economic growth (Gallup Poll).
- In China, the world's biggest polluter, about 64 percent of people identify themselves as environmentalists, more than double that of Europe and the US^{xiv};
- The business community is also alert: The World Economic Forum has put climate change and inequality in the top five global threats for the last five years.

The surge of interest in sustainability is not being carried into the ballot box. Much of the progress to date has been made in the absence of strong political interventions rather than because of it.

IN 2014 IN THE EU-28, TOTAL EXPENDITURE OF GENERAL GOVERNMENT ON 'ENVIRONMENTAL PROTECTION' AMOUNTED TO 0.8 % OF GDP*V

Where the politics of nostalgia and nationalism are taking hold, what can the green economy transition offer? What are the potential or existing political narratives?

Drawing on the outcomes of the GEC 2014 Global Meeting here are a few sample narratives that are popular in different circles:

A. A safe pair of hands: Sound economic management: In times of economic austerity and restrained public finances, investing in a green economy is about better economic decision making. It is about safeguarding our public services – our schools, healthcare, and homes. To do that we need to do more with less; and we need to invest wisely. This is about sound economic management that understands the cost and the benefits: that reducing air pollution will lessen the pressure on our national health systems; that cleaning our water supplies will help the poorest; that conserving energy use will reduce energy bills.

This is also about not throwing good money after bad. To stay within 2 degree temperature increase, then these fossil fuels cannot be burnt so there is a strong economic case for shifting investments towards a greener economy. This is about 'carbon bubbles', 'un-burnable carbon', 'stranded assets' and 'systemic risk'.

IN THE UK AIR POLLUTION COSTS THE NHS £20BN A YEAR***; THIS IS MORE THAN OBESITY AND ALCOHOLISM

COMBINED AND ENOUGH TO KEEP THE NHS VIABLE WELL INTO THE FUTURE.

BETWEEN 60-80% OF COAL, OIL AND GAS RESERVES OF PUBLICLY LISTED COMPANIES ARE 'UN-BURNABLE' IF THE WORLD IS TO HAVE A CHANCE OF NOT EXCEEDING GLOBAL WARMING OF 2°Cxvii

B. The race is on: Powering the fourth industrial revolution: The green economy is about fostering a new, clean industrial revolution. This is a chance to revive flagging economies by investing in new technologies, leading the pack and capture competitive advantages. This is a chance for poorer countries, often rich in natural resources, to power their economies forward. This is about 'green shoots', 'ecoinnovation', 'green jobs', 'resource efficiency', 'circular economy', 'lowcarbon futures' and 'entrepreneurial spirit'. We are ready for the future – get on-board or miss the train.

IN U.S THERE ARE TWICE AS MANY SOLAR WORKERS AS COAL MINERS^{xviii}

c. Frodo vs. Mordor: A quest of community empowerment and resilience: The transition to greener economies is about reviving communities.

Communities have the opportunity to manage, own and benefit from their local natural resource base. This is about 'local food and energy systems', 'decentralisation', 'community empowerment' and 'social justice'. This is about devolving power and capital away from big and remote energy companies, and empowering local communities.

Example: The success of Germany's energiewende, is in part because it was branded as one that empowers local communities – financially and societally – as well as combatting climate change.

IN GERMANY 65% OF RENEWABLE ENERGY IS PRODUCED BY 1.3 MILLION COMMUNITY OR INDIVIDUAL RENEWABLE ENERGY PRODUCERSXIX

D: From crisis to opportunity: A new form of economics altogether: Nature, people and economics are in crisis — and are all interlinked. A rising clamour of different voices from Pope Francis, Christine Lagarde, Barack Obama and Mark Carney — all underscore the same point — the economy is no longer fit for purpose. It has exceeded the limits of the planet and has benefitted only the very few. Rising

inequality is no longer a moral issue, but an economic risk and a threat to political order.

Example: The Club of Rome's narrative stresses that the human world faces civilizational collapse with widespread environmental and social consequences, many already obvious. The conditions for this were created by human activity and can be undone by human actions. To avoid collapse, we need to embrace a new cultural story, one where humanity lives in harmony with nature and where social tensions are drastically reduced. As this new story will take several years to implement we need a strategy to survive in the short-term and buy time.

E: From the roots of the nation and the past:
All nations have unique cultural
relationships to the natural world
that stretch back through time — that
play out in our literature, in our
thinking, in our language. Making a
transition to a green economy is
about tapping back into those
cultural ties. Only by looking
backwards will we also be able to
shape the economy of the future.

Example: China's narrative of "ecological civilization" is prompting reforms to reconcile contradictions between economic development and the environment including protection of natural resource rights; establishment of a national parks system; better and stricter systems for protection of arable land and water resources management; establishment of a green financing system; and improvement of environmental compensation mechanisms.

GREEN ECONOMY COALITION

IV: GEC response?

The GEC is the largest global civil society alliance focused on the transition to green economies. Our theory of change is based on dialogue, advocacy and communication; and our understanding of a green economy is founded on five systemic themes of change:

National dialogues for a green economy:
 Ensuring that national green economy strategies are connected to people and their needs.

Working alongside the UN PAGE initiative to conduct 7 ongoing national dialogues over 3 years with civil society and other stakeholders to ensure that the policy.

 Building a global narrative of transition:
 Developing compelling and robust narratives on the case for transition.

Working across the GEC membership to track the status of the transition and develop narratives (political, media, public, corporate) that can accelerate action.

The GEC is focused on a series of projects supporting our five systemic themes of change:

 Measure What Matters: Shifting corporate, national and global measures of success beyond profit and GDP alone to make people's wellbeing and the health of the planet the yardstick of progress.

Convening business (including accountants, corporate leaders and), national (statistical bodies, central government) and global (UN statistical bodies, international organisations, civil society) to identify ways of aligning measurements of success with the Sustainable Development Goals.

4. Moving the money: Accelerating and widening the scope of financial sector reform to ensure

that it supports the transition to green and fair economies.

Establishing a politically powerful change narrative change narrative; developing a credible advocacy strategy and campaign; benchmarking national progress towards systemic financial system reform.

5. Transforming sectors: The sectors – energy, food, transport, cities – are the backbone of our economies.

Supporting SMEs to access finance, capacity and enabling policy incentives to become greener. Championing the needs and rights of informal workers in green economy policy planning.

 Green Must Be Fair: Unless social outcomes define green policy making, inequality and economic exclusion will continue at pace.

Convening grass roots level and senior people with moral authority calling for action; targeting national green economy action plans and policies to consider the social outcomes of different strategies. Ensuring a just transition and decent work.

 Economics for nature: Despite progress on many technical natural capital tools and market, the environment continues to degrade at an alarming rate.

Ensuring natural capital markets, tools and investment moves from pilots to scale by helping governments to establish enabling policy.

http://www.afdb.org/en/blogs/afdb-championing-inclusive-growth-across-africa/post/recognizing-africas-informal-sector-11645/

http://economictimes.indiatimes.com/industry/auto/news/industry/india-aims-to-become-100-e-vehicle-nation-by-2030-piyush-goyal/articleshow/51551706.cms

For more information see, http://www.greeneconomycoalition.org/updates/event-what-place-informal-economy-green-and-inclusive-growth-0 and contact Emily Benson:

emily.benson@greeneconomycoalition.org

xv EU Statistics; http://ec.europa.eu/eurostat/statistics-

explained/index.php/Government_expenditure_on_environmental_protection

xvii Unburnable carbon 2013: Wasted capital and stranded assets; Carbon Tracker

http://www.carbontracker.org/report/unburnable-carbon-wasted-capital-and-stranded-assets/

ⁱ Renewables 2016 Global Status Report, 2016; REN21, http://www.ren21.net/status-of-renewables/global-status-report/

ii Green Transition Scoreboard 2015; Ethical Markets Media, www.ethicalmarkets.com/

iii Climate Bonds 2016; www.climate**bonds**.net

^{iv} Human Development Report 2010, The Real Wealth of Nations: Pathways to Human Development, http://hdr.undp.org/sites/default/files/reports/270/hdr_2010_en_complete_reprint.pdf

 $^{^{}m v}$ Carbon Pricing Leadership Coalition, http://www.carbonpricingleadership.org/

vi Ibid

vii https://www.parliament.uk/documents/post/Valuingourlifesupportsystemssummaryfinal.pdf

viii Renewables 2016 Global Status Report, 2016; REN21, http://www.ren21.net/status-of-renewables/global-status-report

ix African Development Bank, 2013; 'Recognising Africa's informal sector',

^x World Economic Forum, 2015; Global Risks Report, www3.weforum.org

xi http://www.ren21.net/wp-content/uploads/2016/06/GSR_2016_KeyFindings1.pdf

xii The Economic Times, India. March 2016,

xiv Motivaction interviewed more than 48,000 consumers in 20 countries through online surveys and found Chinese greens

xvi Royal College of Physicians, 2016; https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution

xviii See http://fortune.com/2015/01/16/solar-jobs-report-2014/

xix See www.energytransition.de