



**WE MEAN
BUSINESS**

THE PARIS AGREEMENT

WHAT IT MEANS FOR BUSINESS

A We Mean Business report, produced in partnership with BSR, with legal analysis from DLA Piper and quantitative analysis from NewClimate Institute.



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FOREWORD

The Paris Agreement on climate change is unprecedented in its scope, will define the global economy of the 21st century, and has immediate impact on businesses around the world.

196 countries have agreed to hold the increase in the global average temperature to well below 2°C and have established a stretch target of 1.5°C above pre-industrial levels. They are committing to peak and then rapidly reduce greenhouse gas emissions with the goal of achieving net zero global emissions in the second half of this century. They are further agreeing to build this emissions trajectory through national climate plans which are improved every five years. They are demonstrating the collective intent to sunset the era of fossil fuel driven development and are sending a clear and unequivocal signal to the market that the transition to a thriving clean economy is now inevitable, irreversible and irresistible.

The Agreement is **unprecedented in its scope**. Previous attempts to negotiate a universal agreement on climate change have either failed or resulted in a limited set of countries taking on modest greenhouse gas emissions reductions without a clear process for improving them over time. **In contrast the global community is now acting in unison and agreeing to do so for decades to come.**

This Agreement provides for universal climate action by all countries including all major emitters, the industrialized nations, major emerging economies and the community of developing countries. The United States and China have previously lagged on both climate diplomacy and their willingness to take domestic action. Today they are leading the charge. Their bilateral relationship was critical to building

the diplomatic coalitions needed for success in Paris, and their ambitious commitments to reduce greenhouse gases provided a benchmark for other countries. The Chinese commitment to source 20% of its energy from non-fossil fuel sources before the end of the next decade is a modern day equivalent of the Marshall Plan in terms of size of investments and will add renewable energy capacity equal to all the electricity generation capacity in the United States today. For business this means climate regulation is now a prominent feature of the policy enabling environment in every sector and geography.

The Agreement is also **defining in its implications** for the global environment and for the global economy. Just a few years ago, up to 4.8°C of global warming was projected for the end of the century, which would create what Axa CEO Henri de Castries has called an “uninsurable world”. The emissions reductions agreed in Paris now draw projected warming down to 2.7°C, still dangerous but a genuine commitment to safeguard the global environment. **Crucially, a thriving clean economy is created in that space between 4.8°C and 2.7°C.** Collectively, the national climate plans under the Paris Agreement represent at least a USD 13.5 trillion market for the energy sector alone through 2030. Low carbon investment in energy supply, infrastructure, buildings, manufacturing, transport and land use to implement the national climate plans brought under the Paris Agreement runs into tens of trillions of dollars.

Paris is also **immediate in its impact** on businesses and investors. These national climate plans are now being translated into domestic regulation. China recently integrated its climate targets into its 13th Five-Year Plan. The United States is already pursuing its climate target through a variety of executive actions dealing with energy and transport.

The marketplace is also responding to the signals from Paris. The UN's NAZCA portal counts over 11,000 non-state actor commitments to climate action. We Mean Business is expanding its

climate action framework to achieve action at scale. Before governments return in 2020 to update or submit new national climate plans, climate action by businesses and investors has the potential to course-correct global emissions and help put the world on track to well below 2°C of warming.

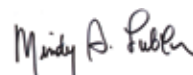
Paris now calls to businesses and investors to accelerate the transition to a thriving clean economy by leveraging policy certainty and seizing trillions of dollars in investment opportunities. It is time to respond to this call.



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COP21/CMP11
Paris, France



APPROACH AND METHODOLOGY

Ahead of COP21, we recognized that the Paris Agreement had the potential to be more than a diplomatic settlement amongst nations, and that if properly designed, it would be a historic catalyst that creates an enabling policy environment and drives climate leadership in all sectors and by all stakeholders.

For this reason **we developed 8 specific policy asks for the Paris Agreement, and formulated agreement-ready language** for these asks in partnership with the global law firm DLA Piper. Together, we published these asks in *The Business Brief – Shaping a catalytic Paris Agreement*, alongside the business rationale for each of them.

THE 8 ASKS WERE:

01

Net zero greenhouse gas emissions well before the end of the century

02

Strengthen commitments every five years

03

Enact meaningful carbon pricing

04

New and additional climate finance at scale

05

Transparency and accountability to promote a race to the top

06

National commitments at the highest end of ambition

07

Adaptation to build climate-resilient economies and communities

08

Pre-2020 ambition through Workstream 2

In *The Business Brief* we called on governments to incorporate our language into the agreement, and on businesses to continue to lead by example by committing to climate action. **Governments heard our call loud and clear. The Paris outcome included all 8 of our asks, in many cases using language that we had proposed.**

This report is the post-Paris counterpart to *The Business Brief*. After translating the We Mean Business coalition's policy asks for government negotiators, we now translate the many facets of the Paris outcome for businesses and investors, including where opportunities exist.

We have used a mixed methods research approach to build our evidence base and report framework. This included a review of key climate literature including the Paris outcome and the national climate plans brought forward by countries, interviews with individual thought leaders from the business community, and discussions held within focus groups.

The legal and qualitative analysis for this work was once again conducted in partnership with DLA Piper, a global law firm with practices in the Americas, Asia Pacific, Europe, Africa and the Middle East. DLA Piper advised on our interpretation of the Paris Agreement and how to more usefully present it to the business community.

The quantitative analysis of the national climate plans was conducted in partnership with NewClimate Institute, a climate research institute supporting the implementation of climate action around the globe.



AN UNPRECEDENTED CATALYST FOR CLIMATE ACTION

The Paris Agreement on climate change is a historic turning point. Together, governments are sending a decisive market signal that the transition to a thriving clean economy is inevitable, irreversible and irresistible. The policies and investments resulting from the Paris Agreement will reshape national economies, development paths, and value chains for companies across the globe. As key drivers of the global economy, businesses and investors can seize opportunities within this rapidly changing landscape to innovate and compete.

The Paris Agreement marks a watershed moment for the global economy.

- ▶ For the first time **climate ambition is universal. All major economies** are implementing national climate plans to reduce emissions and build resilience, and will improve the ambition of these plans over time. Unlike its predecessor the Kyoto Protocol, the Paris Agreement requires emissions reductions by all countries, regardless of their economic development.
- ▶ For the first time **the international community has committed to net zero** greenhouse gas emissions in the second half of this century, in order to hold warming well below 2°C, with a stretch target of 1.5°C. The global community

will continuously take stock of progress towards this goal and a parallel goal to build climate resilience.

- ▶ For the first time **all countries are subject to the same framework to report and verify** their greenhouse gas emissions and achievement of their national climate plans.
- ▶ For the first time an international climate agreement includes the goal of **shifting finance flows towards low carbon and climate-resilient investment**. The Paris Agreement recognizes the importance of climate finance to both global mitigation and adaptation.
- ▶ For the first time the **private sector is recognized as an integral part of the global solution** to address climate change. There is **a clear policy signal** for businesses and investors across all jurisdictions to make low emission or emission-neutral investments, whether through financing projects or investing in new technologies.

These pivotal firsts were adopted by consensus under the Paris Agreement, which was a defining moment after decades of international negotiations. Governments are committing to providing an enabling policy environment for businesses and investors to accelerate the transition towards a thriving clean economy.

LEVERAGE POLICY CERTAINTY

The Paris Agreement provides long-term policy certainty to address climate change and sunsets the era of high carbon development. It sets a clear economic direction of travel for both government and the private sector over the course of this century.

This direction of travel is supported by processes designed to advance a low carbon, climate-resilient global economy, which will require a structural transformation of our energy, land use, and urban systems. To remain competitive in an evolving marketplace, businesses and investors will need to understand these international and national processes and take corresponding climate action.

Long-term goals for the global economy

The Paris Agreement is a binding international agreement which makes our economic destination clear – a world with warming well below 2°C and net zero greenhouse gas emissions in the second half of the century. The agreement commits governments to processes designed to bring us towards this destination, including an obligation to revise and submit national climate plans every five years, and to pursue domestic policies to achieve the targets in these plans.

The Paris Agreement includes three overarching and interdependent long-term goals which set our direction towards a thriving clean economy through the rapid deployment of low or emissions-neutral technologies.



TEMPERATURE GOAL

To hold global warming well below 2°C above pre-industrial levels, and to pursue a stretch target of 1.5°C.¹

To achieve the temperature goal, governments aim to have global emissions peak as soon as possible, and then to rapidly reduce them in accordance with the best available science reaching net zero in the second half of the century, on the basis of equity.²

FINANCIAL GOAL

To direct global finance flows towards low greenhouse gas and climate-resilient investment.³

Climate finance—and in particular private finance—is crucial to achieving the temperature and resilience goals. Shifts in large scale investment will be required both to reduce GHG emissions and to build resilience to climate impacts.

RESILIENCE GOAL

To increase the resilience of communities and businesses to the impacts of climate change.⁴

Investments in climate resilience will be required even if the temperature goal is achieved, as we are already experiencing disruptive impacts first hand. Faster emission reductions will reduce the cost of future climate impacts.

These long-term goals set our collective path towards a global economy which avoids the worst impacts of climate change, and which is resilient to the risks we still face. They therefore send strong signals to the marketplace to shift the investment necessary to build this economy.

The net zero emissions trajectory

In addition to these long-term goals, the Paris Agreement also draws a global emissions trajectory which peaks as soon as possible, and then rapidly falls in accordance with the best available science, reaching net zero emissions in the second half of this century.⁵ To follow this global trajectory, each country's emissions must similarly peak and then fall towards net zero within this century, on a timeframe appropriate to its development.

How fast global emissions peak and fall to net zero directly impacts our success in achieving the long-term temperature goal. The faster we accomplish this, the more likely we will hold warming well below 2°C and meet our stretch target of 1.5°C.⁶ And our success in drawing the global emissions trajectory downwards over time will depend upon the mobilization of low emission finance flows.

Processes driving us towards the long-term goals

To achieve the long-term goals agreed by governments, the Paris Agreement includes processes which steer us in the direction of a low carbon, climate-resilient economy.

01 *Increasingly ambitious national climate plans*

The main process under the Paris Agreement to reduce greenhouse gas emissions is for each country to prepare and communicate successive national climate plans (called "nationally determined contributions").⁷ These plans provide businesses and investors a forecast of the regulatory environments in which they operate or seek to operate. They also highlight where future opportunities may exist. The agreement binds countries to pursue domestic policies to achieve their emissions reduction targets under the national climate plans.⁸

The Paris Agreement establishes a five year cycle for the revision and resubmission of national climate plans.⁹ The national climate plans submitted in Paris will be updated and come into effect in 2020 with new plans to be submitted every five years thereafter.¹⁰ Successive plans will improve to reflect each country's highest possible ambition, increasing that country's contribution towards the long-term goals.¹¹

Two years before the submission of new national climate plans, the existing plans will be evaluated collectively as part of a global stocktake, which tracks global progress towards achieving the long-term goals.¹² Countries will revise their plans taking into account the results of the global stocktake.¹³

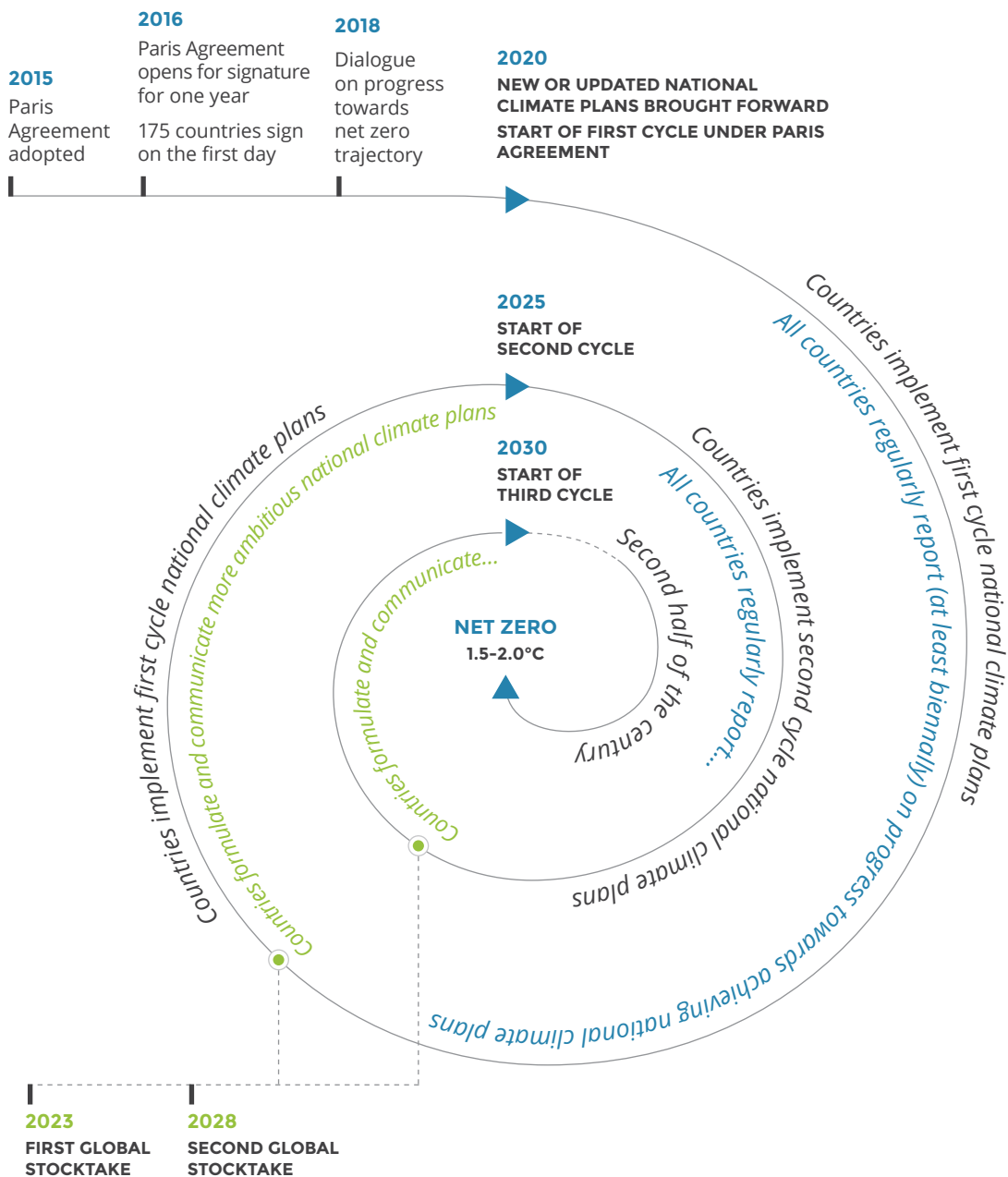
This process to review and revise national climate plans is designed to keep governments accountable to the long-term goals. Collective stocktakes and continuous improvement of national climate plans will support increasing low emission investments by businesses and investors.

In addition, the Paris Agreement also requests that countries voluntarily submit long-term low emission development strategies by 2020.¹⁴ These strategies extending to mid-century will provide additional long-term policy certainty for the private sector. The first of such strategies are anticipated to be released this year.

UNDER THE PARIS AGREEMENT, ALL COUNTRIES HAVE THE FOLLOWING LEGAL OBLIGATIONS:

- ▶ Prepare and communicate successive national climate plans every five years and pursue domestic policies to achieve the targets in these plans.
- ▶ Be informed by a global stocktake of progress towards the long-term goals, in order to improve the ambition of successive national climate plans.
- ▶ Provide national emissions inventories and report on the achievement of national climate plans at least biennially (with exceptions for the smallest economies). This will be verified by expert review.
- ▶ Account for the national climate plans following a set of transparency and accounting principles.
- ▶ Undertake adaptation planning appropriate to national circumstances.

THE FIVE YEAR CYCLE FOR NATIONAL CLIMATE PLANS



02 *Mobilizing Climate Finance*

The Paris Agreement includes financial mechanisms which are intended to mobilize and direct climate finance towards the long-term goals, providing critical support to implementation of national climate plans. Although international agreements concern national governments and do not directly place obligations on the private sector, private sector finance is explicitly recognized and welcomed as part of global efforts.¹⁵ This recognition is unprecedented.

The Paris Agreement makes clear that developed countries should lead a larger global effort to mobilize climate finance, and reaffirms the current target of USD 100 billion per year by 2020,¹⁶ with a new collective climate finance target to be selected by 2025.¹⁷ Developed countries are obligated to contribute and report biennially on the provision of public climate finance.¹⁸

However, these public funds are but a small part of the global effort, intended to send a strong signal to catalyze broader finance flows to achieve the long-term goals of the Paris Agreement.¹⁹ By 2030, USD 90 trillion will be invested in infrastructure, most of it in developing economies. Shifting these trillions will be critical to building low emission, climate-resilient economies.²⁰

Already, many private sector actors are increasing climate finance to align with the long-term goals.²¹ Investors who do not respond to the call of the Paris Agreement risk becoming laggards over the long-term. Private climate finance needs to be mobilized and leveraged, following the lead set by national governments.

03 *Building Climate Resilience*

To increase the resilience of businesses and of communities to climate impacts, the Paris Agreement requires countries to engage in adaptation planning and to implement plans which are appropriate within their national context. Nearly 90% of the national climate plans submitted so far include policies to build climate resilience.²²

The Paris Agreement requires that each country implement appropriate adaptation plans.²³ The agreement outlines broad actions a country can undertake to comply with this, including through economic diversification and sustainable management of resources.²⁴ Reporting on these actions is voluntary and they are an input into the global stocktakes towards the long-term goals.²⁵

04 *Mandatory Reporting and Verification*

The Paris Agreement also includes an enhanced transparency framework to build trust that countries are indeed meeting their obligations. Previous agreements have provided for one set of reporting and verification requirements for developed countries, and a second weaker set for developing countries. This single framework will provide flexibility for countries with less capability to report.

Just as leading companies report their emissions and their progress towards emissions reduction targets, all major economies will now have mandatory obligations to report at least biennially on the implementation of their national climate plans, and to provide a national inventory of greenhouse gas emissions by sources and removals by sinks.²⁶ These reporting requirements will apply to the vast majority of global emissions.²⁷

As part of this framework, all information reported by a country on the implementation of its national climate plan will be verified by expert review.²⁸ This review will measure the consistency of the information against guidelines currently being developed by the UNFCCC, and identify where the country can improve. As a minimum, the agreement sets out that when accounting for emission reductions, countries must apply the principles of environmental integrity, transparency, accuracy, completeness, comparability and consistency, and avoid double counting of emissions.²⁹ All countries are also required to participate in a multilateral discussion of their progress in achieving their national climate plans and mobilizing climate finance.³⁰

The application of the same framework to all countries provides a clear signal to businesses that emission reductions will be accounted for and scrutinised in the same manner irrespective of the jurisdiction in which they operate.

05 *Cross-Border Carbon Pricing*

Finally, the Paris Agreement reinvigorates efforts for cross-border pricing of carbon. It envisages the voluntary transfer of emissions credits between countries towards the fulfilment of their national climate plans, and requires that countries apply robust accounting and avoid double counting when doing so.³¹ It also creates a new sustainable development mechanism, a possible successor to the Kyoto Protocol's Joint Implementation and Clean Development Mechanism, which could enable activities financed in one country to be counted towards another country's national climate plan.³²



SEIZE THE MARKET OPPORTUNITY

The Paris Agreement is more than a diplomatic settlement between nations. It is a historic catalyst that makes the transformation to a low carbon economy inevitable, irreversible, and irresistible.³³ Never before have so many countries agreed to reduce greenhouse gas emissions. The Kyoto Protocol did not include emissions reduction targets for developing countries and the emerging economies, whereas an unprecedented 189 countries have submitted national climate plans under the Paris Agreement as at the time of this publication.³⁴

Predicted low carbon investment in China is on a scale never seen before. China is currently the largest investor in clean energy, and accounted for almost a third of total global investment in 2015 at USD 110.5 billion, a 17% increase year over year.³⁵ It currently has more than double the renewable energy capacity of the US and with its target of generating 20% of its energy from non-fossil fuel sources by 2030,³⁶ will install at least an additional 800 to 1,000GW of zero-emission facilities, equal to the size of the entire current US electricity grid.³⁷

The clear investment signal from Paris to reach net zero emissions is enabling businesses and investors to unleash a wave of innovation in low carbon technologies, create new products and services, generate jobs, reduce energy consumption, realize cost savings, and shift investments away from high carbon assets.

HIGHLIGHTS FROM THE NATIONAL CLIMATE PLANS

With the Paris Agreement in place, 96% of countries covering 98.8% of global GHG emissions will pursue policies to achieve the targets in their national climate plans.³⁸ Every company, irrespective of sector or region, now needs to factor climate policy into their operations, regulatory assessments and investment decisions.

EMISSIONS REDUCTION TARGETS OF THE LARGEST ECONOMIES

COUNTRY	SHARE OF GLOBAL GDP ³⁹ (NOMINAL)	EMISSIONS REDUCTION TARGETS ⁴⁰
UNITED STATES	24.5%	Double the pace of decarbonization with new target of 26-28% GHG emissions reductions below 2005 levels by 2025.
CHINA	15.0%	Peak CO ₂ emissions around 2030 and reduce CO ₂ intensity 60-65% below 2005 levels by 2030.
EUROPEAN UNION	22.2%	At least 40% GHG emissions reductions below 1990 levels by 2030.
JAPAN	5.6%	Reduce GHG emissions 26% below 2013 levels by 2030.
BRAZIL	2.4%	Shift from targeting the carbon intensity of GDP to an absolute GHG emissions reductions target, of 37% below 2005 levels by 2025 and 43% by 2030.
RUSSIA	1.8%	Reduce GHG emissions by 25-30% below 1990 levels by 2030.
AUSTRALIA	1.7%	Reduce GHG emissions by 26-28% below 2005 levels by 2030.
MEXICO	1.6%	Reduce GHG emissions unconditionally 25% below business-as-usual baseline by 2030, and up to 40% if certain conditions are met.

While the Paris Agreement is universal and has global scope, examining national climate plans reveals opportunities in each sector during this accelerated transition to a low carbon economy.

In most countries, the potential to decrease emissions lies principally with energy supply and demand. Depending on their stage of economic development, existing infrastructure and available resources, countries are prioritizing different policy levers to achieve reductions. We highlight how these are shaping the world's largest economies in the years to come.

Energy Supply

Energy generation policies from Paris will reshape capital investments, development paths, national economies, and corporate value chains across the globe. The risk of climate change has triggered a fundamental shift in how the world will fuel its projected growth, and represents one of the biggest opportunities for business to capitalize on efforts to reduce emissions. Companies will be incentivized to increase GHG emission-neutral generation, to use less carbon intensive fossil fuel sources, and to scale-up carbon capture and storage.

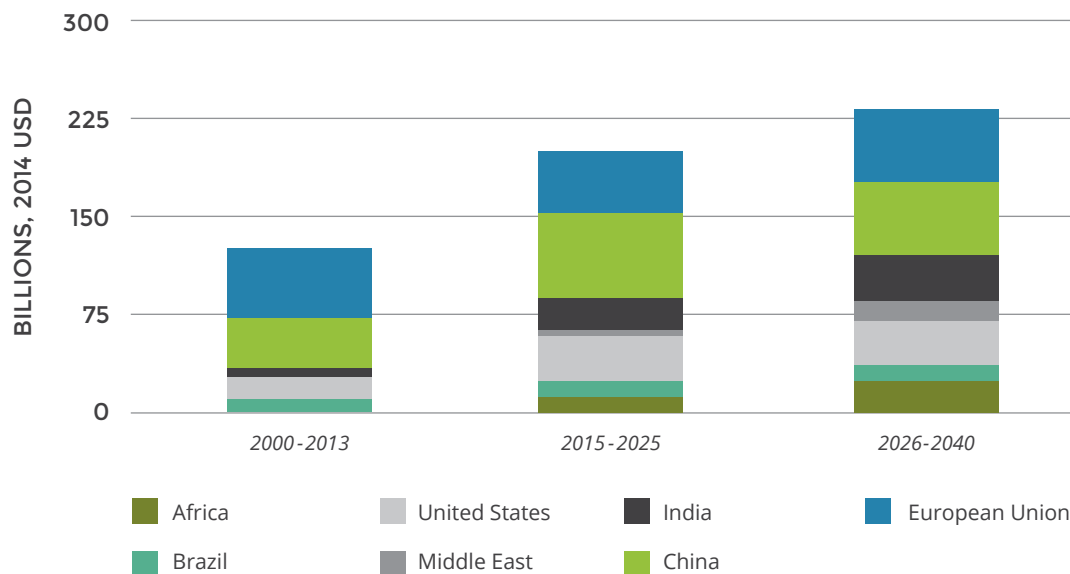
A significant opportunity comes from the emphasis of national climate plans on increasing the share of renewable energy in domestic energy supply. This is stimulating an aggregate increase of 4,400TWh from renewables by 2030 that will bring renewable energy generation to 32% of global energy supply.⁴¹ Conversely, the projected aggregate energy supply increase from fossil fuels is only 1,800TWh, resulting in a compound annual growth rate of installed

capacity of only 0.8%, compared to 10% for solar and 7% for wind.⁴² The economic opportunity associated with building new capacity for renewables clearly outweighs that of fossil fuels.

Even with implementation of the current national climate plans, consumption of fossil fuels will still increase in the coming years. However, many major energy-consuming countries including the US and EU are projected to switch coal and oil-based generation to natural gas, which is much less emissions-intensive.⁴³ Future improvement of the national climate plans will further shift these projections.

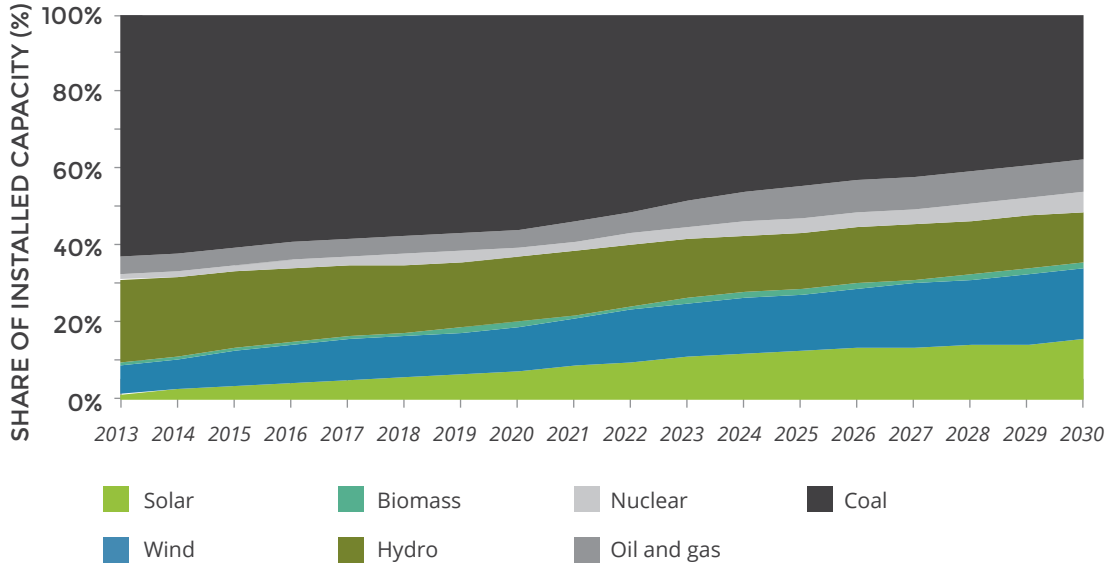
Investors can seize an extraordinary opportunity in the market for renewable energy supply, with the IEA projecting global investment from the national climate plans to 2030 at USD 3.9 trillion, including USD 1.3 trillion in wind, USD 1.1 trillion in solar, and 0.9 USD trillion in hydro.⁴⁴ Nuclear will also play an important role in reducing emissions, particularly in China and India. OECD countries will see their renewable capacity rise from 33% in 2014 to over 54% of total capacity in 2040.⁴⁵

ANNUAL CLEAN ENERGY INVESTMENT



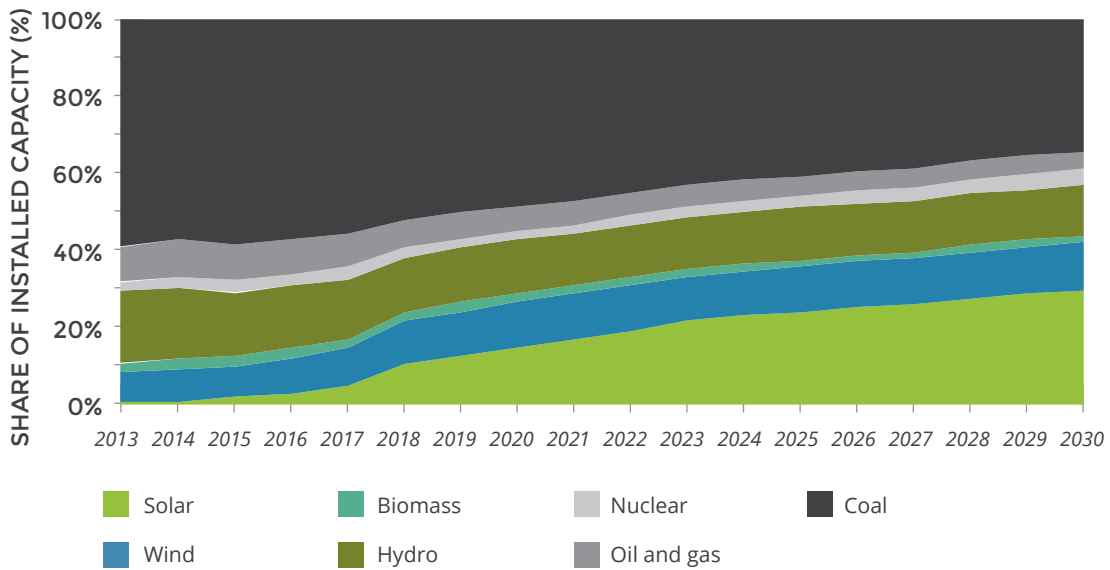
SOURCE: Based on data from IEA 2014 World Energy Investment Outlook and IEA 2015 World Energy Outlook⁴⁶

SHARE OF INSTALLED CAPACITY IN CHINA THROUGH 2030



SOURCE: ClimateWorks Carbon Transparency Initiative models informed by Bloomberg New Energy Finance 2015 New Energy Outlook data. Data portal forthcoming in second half of 2016⁴⁷

SHARE OF INSTALLED CAPACITY IN INDIA THROUGH 2030



SOURCE: ClimateWorks Carbon Transparency Initiative models informed by Bloomberg New Energy Finance 2015 New Energy Outlook data. Data portal forthcoming in second half of 2016⁴⁸

Businesses and investors should expect that energy supply targets in the national climate plans will lead to favorable market and regulatory conditions for low carbon investment.

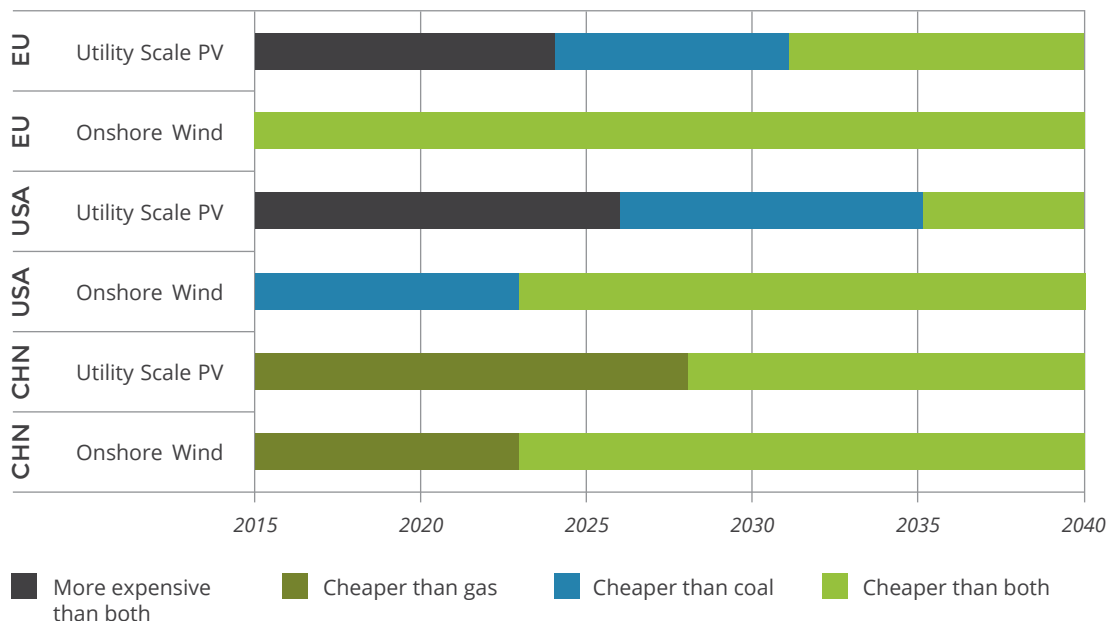
- ▶ **India** commits to reaching 40% non-fossil fuel electricity by 2030. Approximately 200GW in renewable capacity and 51GW in nuclear capacity will be added by 2030.⁴⁹
- ▶ **China** commits to reaching, and will likely exceed, 20% non-fossil fuel energy by 2030. This will require the addition of 800–1,000 GW of wind, solar, nuclear, and other zero emission power generation capacity by 2030, equivalent to almost all electricity generation capacity in the US today.⁵⁰ Between 2015 and 2020, China will increase installed solar capacity by 272% to 160GW, and installed wind capacity by 121% to 250GW.⁵¹ China’s increase in coal and gas capacity is now less than one third the rate of renewables.⁵²
- ▶ **Indonesia** targets 23% of energy use through renewable energy by 2025.⁵³
- ▶ **Brazil** commits to 28-33% renewable energy (excluding hydropower) in the total energy mix by 2030, and increasing the share of sustainable biofuels in the energy mix to 18% by 2030.⁵⁴
- ▶ The **United States** is enforcing carbon-pollution standards in new and existing power plants through the US Clean Power Plan. This phases out the least efficient coal-fired power plants and increases

investment in renewables. The US is projected to grow energy supply from renewables from 10% today to 20% by 2030.⁵⁵ In partnership with Canada, President Obama has set a goal to reduce methane emissions from the oil and gas sector by 40-45% below 2012 levels by 2025.⁵⁶

- ▶ The **EU** is growing energy supply from renewables to 27% by 2030. This will stimulate additional investment in renewables of EUR 38 billion per year up to 2030.⁵⁷
- ▶ **Canada’s** GHG emission reductions target is 30% below 2005 levels by 2030. To achieve this, Canada will ban the construction of traditional coal-fired power plants and phase out existing coal-fired electricity units without carbon capture and storage.⁵⁸

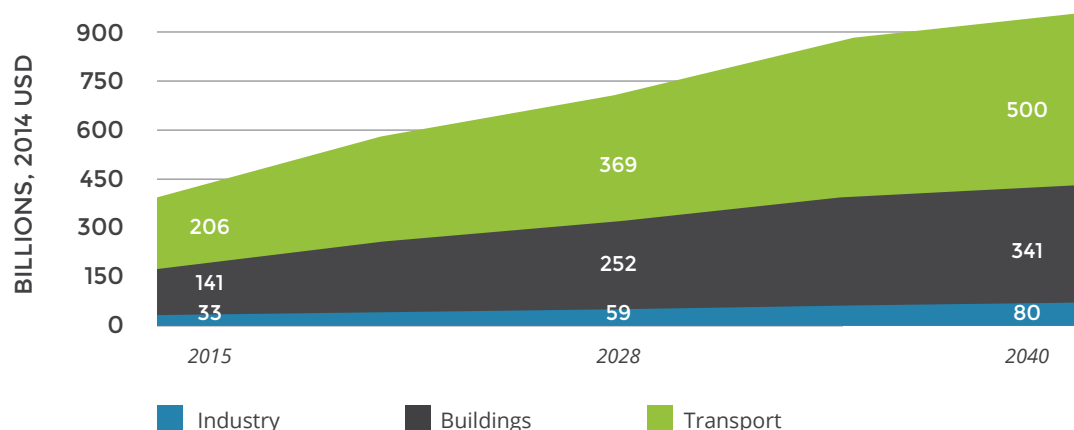
In addition to new climate and energy policies, economics will increasingly drive the uptake of renewables. Project costs are expected to fall an additional 32% for wind and 48% for solar by 2040. The private sector has also taken the lead in technological development. In many cases renewable technologies are already competitive with natural gas and coal. Solar power costs have fallen 80% since 2008 and in some places supply contracts are as low as \$0.06 per kilowatt hour.⁵⁹ Further technological development, such as storage and smart grid technologies, will make renewables increasingly competitive.

RENEWABLES BECOMING COST COMPETITIVE WITH FOSSIL FUELS



SOURCE: Bloomberg New Energy Finance New Energy Outlook 2015⁶⁰

ANNUAL GLOBAL ENERGY EFFICIENCY INVESTMENT



SOURCE: Based on data from IEA World Energy Outlook 2015 New Policies Scenario⁶¹

Energy Efficiency

The national climate plans brought forward under the Paris Agreement increase efficiency through new infrastructure, technologies and production processes in the transport, industry, and building sectors. They provide additional incentives to deploy low carbon technologies and increase compliance costs through taxes, regulations, or efficiency standards.

The economic opportunities from energy efficiency are large in developing and developed countries alike. Looking out to 2030, the IEA projects that implementing the national climate plans will require USD 5.4 trillion in investment in energy efficiency,⁶² and generate about 24% of total emission reductions.⁶³ In the US, doubling energy productivity by 2030 will save USD 327 billion a year in energy costs and reduce CO₂ emissions by 33% by 2030.⁶⁴ There is a significant opportunity to improve electricity transmission in India, where 17% of electricity is currently lost through transmission, far higher than the 6% average in the US and China.⁶⁵

Buildings

The building sector represents one third of final energy use worldwide, so it is not surprising that roughly half of the national climate plans brought forward address this sector.⁶⁶ Investment in building efficiency can provide attractive returns to stakeholders through energy cost savings as well as enhanced real estate value. Existing solutions include thermal insulation, efficient lighting, smart appliances, changing consumer behavior, and building retrofits. The national climate plans also include

commitments to improving construction codes, including high efficiency standards for new building designs and operations.⁶⁷

Businesses who prepare for new policies and investment opportunities from specific national commitments will be in a position to succeed. For example:

- ▶ **India** will introduce new energy efficiency standards and labeling programs for appliances, and will transition from incandescent lamps to LED lighting.
- ▶ In the **EU**, all new buildings must be nearly zero energy as of 2021.
- ▶ The **United States** will implement existing and new regulations to improve building-energy conservation standards.⁶⁸
- ▶ **Japan** will carry out a nationwide public awareness campaign to increase energy-efficient behavior and reduce energy demand.

Governments support these initiatives because of their GHG abatement potential and because they create jobs, improve health and productivity, improve utility capacity management, and reduce pressure on public budgets. For example, in 2013 the German government invested USD 2.4 billion in a residential energy efficiency program, resulting in USD 14 billion in additional energy efficiency investments from private companies and unlocking USD 45 billion in residential construction.⁶⁹ As the world's urban population increases by over 2.5 billion by 2050, the construction of new, energy-efficient buildings and cities will be essential to the transformation of the economy.

Industry

Industry accounts for 15% of direct energy-related CO₂ emissions. With long-term policy certainty in place, these can be reduced through investment in continuous efficiency gains, advanced innovation, and the accelerated deployment of solutions at scale.

Industries that use high-emissions energy sources will require technologies like carbon capture and storage. Light industries like textile manufacture can shift their source of electric power.⁷⁰ Going forward, industry leaders can use the opportunities created by national climate plans to change their production methods, increase research and development for new technologies and disruptive innovation, and partner with others in industry initiatives.⁷¹

SELECTED INDUSTRY POLICIES IN THE NATIONAL CLIMATE PLANS⁷²

COUNTRY	SELECTED POLICIES
CHINA	Creates a national emissions trading system in 2017 which will cover industry sectors including ferrous and nonferrous metals, power generation, chemicals, building materials, and paper manufacture. Formulates low carbon targets, standards, and plans in key industries including power, iron, steel, nonferrous metal, building materials, and chemical industries.
EUROPEAN UNION	Target of 43% GHG emission reductions below 2005 levels in ETS sectors by 2030. For industry, this includes facilities producing iron and steel, cement, glass, lime, bricks, ceramics, pulp, paper, petrochemicals, and aluminum.
INDIA	Highly polluting industries will have to install 24x7 real-time monitoring of emission and effluent discharge points.
JAPAN	Seeks to achieve energy efficiency measures and technological innovation across several industries, including iron and steel, chemicals, ceramics, stone and clay production, and pulp and paper.
MEXICO	Reduces emissions across several industries, including iron and steel, minerals, chemicals, non-energy products from fuels, and electronics.

Land Use

Companies whose value chains rely on forestry, agriculture or land use are directly affected by the Paris Agreement and by the national climate plans brought forward under it. The Paris Agreement encourages the use of results-based payment methods, such as REDD+ (Reducing Emissions from Deforestation and Forest Degradation) to ensure the sustainable management of forests. With as much as 10-15% of global emissions caused by deforestation and forest degradation, these initiatives are an important vehicle for policymakers to achieve their emission reduction goals.

Some of the ambitious commitments within national climate plans to reduce land use emissions include:

- ▶ India plans to capture 2.5 to 3 billion metric tons of carbon dioxide through additional forests by 2030.
- ▶ Brazil aims to restore 15 million hectares of degraded pasturelands, restore and reforest 12 million hectares of forests, and eliminate illegal deforestation, all by 2030.
- ▶ Indonesia has pledged a 29% decline in forest-related emissions from business-as-usual scenarios by 2030.
- ▶ China will increase forest stock volume by 4.5 billion m³ above 2005 levels by 2030 through afforestation, promoting citizen tree planting, the protection of natural forests, and the restoration of forests and grasslands from farmland development.

Going forward it is in the interest of business to collaborate with governments to help them to achieve these goals, thereby minimizing climate risk in their own supply chains. REDD+ for example anticipates private sector participation and has the potential to improve access to financial capital, accelerate the development of new products and services, and improve brand value.

Transport

Businesses can also align investment decisions with increased policy certainty in the transport sector, which accounts for 23% of energy-related CO₂ emissions. Indeed, over 70% of national climate plans include transport targets. 89% of these include mitigation through passenger transport and 86% include urban transport measures.

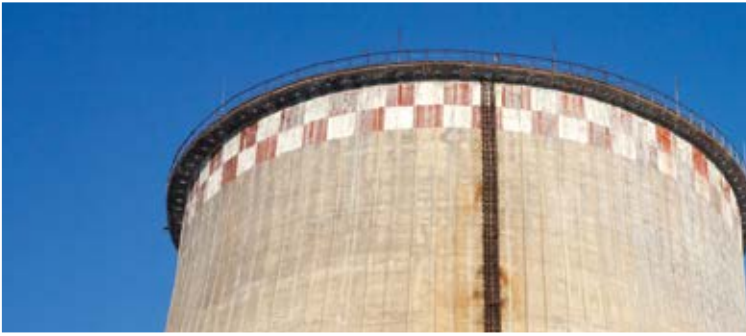
In addition to fuel efficiency improvements, low carbon fuels, alternative and cleaner fossil fuels, and electric vehicles, are essential to achieving national climate plans and offer an appealing economic opportunity. Today, only 3% of transportation fuels are low carbon. According to the IEA, 10% of transportation fuels must be low carbon by 2030 if we are to continue economic growth while holding global warming below 2°C.⁷³

Developed countries are focusing mostly on fuel efficiency improvements or decarbonizing fuels, while developing countries are more focused on public transport improvements.⁷⁴ The transport sector and companies that rely on it for their operations and logistics have an opportunity to help shape the design of public transport systems, and policies to decarbonize fuels and increase vehicle efficiency.⁷⁵

SELECTED TRANSPORT TARGETS IN THE NATIONAL CLIMATE PLANS⁷⁶

COUNTRY	SELECTED TARGETS
CANADA	Renewable fuels regulations require that gasoline contain an average 5% renewable fuel content by 2030.
CHINA	Promote the share of public transport in large and medium-sized cities, targeting 30% by 2020. Accelerate the development of green freight transport.
INDIA	Increase the share of railways from 36% to 45% of total land transport by 2030, thereby decreasing the load on less efficient diesel operated road traffic.
JAPAN	Reduce carbon dioxide emissions from transport 27% below 2013 levels by 2030.
REPUBLIC OF KOREA	Strengthen the average automobile emission standard from 140 gCO ₂ /km in 2015 to 97 gCO ₂ /km in 2020.
SOUTH AFRICA	Investment in public transport to grow at 5% per year.

Sector by sector, the national climate plans brought forward under the Paris Agreement are transforming the regulatory landscape in which businesses and investors operate. They give immediate effect to the universal commitment to reduce GHG emissions towards net zero, and open new market opportunities to scale-up low carbon solutions. **With long-term policy certainty and sectoral policies being put into place, businesses and investors have an incentive to invest and innovate. Those who do will be well rewarded for their efforts.**



PUT A PRICE ON CARBON

Carbon pricing is one of the key policy instruments needed to harness the power of business to tackle climate change. Paris sent a clear signal to the business community when 90 national climate plans included proposals for emissions trading systems, carbon taxes and other carbon pricing initiatives.⁷⁷

Through carbon pricing, governments are creating the policy landscape that enables companies to manage risks, make strategic investment decisions and shift towards low carbon technologies. Companies engaging with carbon pricing policies and establishing an internal carbon price have seen concrete results in terms of both their financial and climate strategies.

Businesses and investors must prepare for the increased uptake of carbon pricing policies and position themselves accordingly as these policies shape their markets. The Paris Agreement itself anticipates the rise of carbon markets and modern frameworks to link and integrate them. More harmonized markets will increase GHG reduction options for business, enhance carbon price stability, reduce competitive distortions, and strengthen further political collaboration.

The proportion of global emissions covered by carbon pricing policies has increased threefold over the last decade and includes seven of the 10 largest economies. 40 national jurisdictions and over 20 cities, states and regions have adopted pricing policies.⁷⁸ A number of additional pricing policies are also scheduled to be implemented over the next few years. These include:

- ▶ Carbon taxes planned for Chile and South Africa.
- ▶ Plans in Ontario, Washington State and Oregon to develop an emissions trading system similar to Québec.

WHY USE AN INTERNAL CARBON PRICE?

Businesses can already use existing and projected carbon market prices to identify potential savings from reduced carbon emissions, to evaluate new carbon-producing capital expenditures, and to evaluate lower carbon business models. Last year, over a thousand companies reported to CDP that they were using an internal price on carbon or would do so over the next two years.⁷⁹

Internal carbon prices can be integrated into business decision making in several ways:

Risk Management

Momentum is growing for businesses to use an internal price of carbon to assess and manage risks. The investment community is using carbon pricing to value assets, measure portfolio risk, and assess credit ratings. Companies can use a shadow price, the estimated future price of carbon, to assess the potential impact on their operations. The variation in prices used by different companies and industries reflects the different material inputs, risks and opportunities that exist within their respective operations and marketplaces. This includes forecasting future carbon prices which are likely to increase over time due to repeatedly strengthened regulation.

For example, **E.ON**, a German utility, uses two scenarios to understand potential risks to their business model: EUR 20 per metric ton of CO₂ as a base case of where they see EU ETS prices trending, and a higher price of EUR 40 per metric ton. According to US industrial company **Owens Corning**, “quantifying these added costs, in the event that a price is put on carbon in regions around the world where a current price or trading scheme is not in place, provides additional insight into our business decisions. We bracket this analysis, on the low end at USD 10/metric ton and a high of USD 60/metric ton.”⁸⁰

Financial Planning

The profitability of low carbon assets will increase due to carbon pricing. Shadow prices enable companies in all sectors to plan their operations around expected future carbon and energy-related costs. These include **Google**, which uses a shadow price when evaluating the establishment of individual data centers, and **Deutsche Bank**, which uses an internal carbon price to calculate the cost and payback period of energy efficiency initiatives.⁸¹

Climate Targets

Business leaders also recognize that carbon pricing is a cost-effective way to meet corporate climate targets. For example, **Microsoft** has used carbon pricing, beginning in 2012, to reach its carbon emissions reduction goal and become net carbon neutral.⁸² Business units had a strong incentive to reduce emissions because the cost of carbon was included in their annual budgets. Microsoft also used the revenue from its business units to reach its carbon neutral goal by investing in carbon offsetting measures like green power and building efficiency.

REGIONAL MARKETS: SPOTLIGHT ON CHINA

The most significant upcoming development in carbon pricing will be a new national Chinese emissions trading system to be implemented in 2017. China is the world’s largest emitter of greenhouse gases, accounting for more than 27% of the world’s emissions.

In the last few years, China has piloted carbon trading programs in seven regions and cities. When these pilot markets are merged into a national carbon market, China will overtake the EU to become the largest carbon market in the world.

The Chinese national emissions trading system will include 10,000 enterprises when it comes into effect. It will cover six sectors and 15 sub-industries including power, chemicals, petrochemicals, construction materials, nonferrous metals, steel, papermaking and aviation. It will be a cap-and-trade system designed to encourage companies to cut their emissions so they can sell unused allocations.

CARBON PRICING LEADERSHIP COALITION

The Carbon Pricing Leadership Coalition is a voluntary partnership of national and sub-national governments, businesses, and civil society organizations working together towards the long-term objective of a carbon price applied throughout the global economy by:

- ▶ Strengthening carbon pricing policies to redirect investment commensurate with the scale of the climate challenge.
- ▶ Strengthening the implementation of existing carbon pricing policies to better manage investment risks and opportunities.
- ▶ Enhancing cooperation to share information, expertise and lessons learned on developing and implementing carbon pricing through various readiness platforms.



MANAGE YOUR CLIMATE RISKS

Although the Paris Agreement is a catalytic instrument that is already shifting investment into a thriving clean economy, businesses and investors will continue to face highly disruptive climate impacts even if warming is held well below 2°C. The Paris Agreement addresses resilience to these impacts through a global resilience goal and national strategies to build adaptive capacity country by country, but risks will remain and businesses will need to enhance their own climate resilience. Businesses with robust climate risk management and resilience strategies will increase investor confidence and protect both their operations and their license to operate.

According to the World Economic Forum's 2016 Global Risk Assessment Report, failure to mitigate or adapt to climate change is the highest impact risk to business for years to come.⁸³ The private sector is exposed to climate risks that are already widespread, material, and projected to continue increasing in intensity and frequency. Business operations and supply chains are adversely affected by extreme weather events, temperature variations, droughts and floods, sea-level rise, acidification of soils and oceans, and disease vectors. Climate resilience is now essential for any forward-looking business.

Nearly 75% of suppliers in a recent survey stated that climate change presents risks that could significantly impact their business operations, revenue, or expenditures. Yet only 50% of those surveyed are currently managing this climate risk—with even fewer suppliers measuring and managing associated water-related risks.⁸⁴



CLIMATE RISKS TO BUSINESS

Businesses face many different types of climate-related risks:

1. **Physical and Operational Risk:** The risk to facilities, manufacturing, supplies, and workforce from climate impacts such as extreme weather events.
2. **Input Risk:** The risk of reduced availability of natural resources and raw materials, including water, materials, minerals, and commodities.
3. **Market Risk:** The risk of changed market demand, which could include stranded assets.
4. **Financial Risk:** The risk of financial loss due to climate impacts.
5. **Reputational Risk:** The risk of failing to deliver on the expectations of key stakeholders including investors.
6. **Regulatory Risk:** The impact of increasingly stringent climate policies that result from a rising price on high carbon sources of energy and carbon-intensive activities.⁸⁵

There are many ways the private sector can act to enhance climate resilience. These include physical investments such as flood barriers; climate-proofed infrastructure and the protection of biodiversity and ecosystem services; technological investments such as early warning systems for local communities; financial investments such as weather derivative insurance products; and social investments such as education and worker training, women's empowerment initiatives, and social safety nets that help reduce risk when disaster hits.⁸⁶

BUILD RESILIENCE INDUSTRY BY INDUSTRY

Climate impacts will affect different global industries in various ways. Below we examine the textiles, manufacturing, agriculture and insurance industries, and particular national climate plans which protect them.

Textiles–Bangladesh

As the world's second largest garment exporter, textiles are central to the Bangladesh economy as a source of both foreign exchange earnings and domestic employment.⁸⁷ In 2014, the value of Bangladesh's apparel and accessories exports exceeded USD 28 billion and accounted for 84% of the value of total exports.⁸⁸ Bangladesh's ready-made garment sector directly employed about 4.2 million people of which approximately 60% were women.⁸⁹ In addition, Bangladesh is one of the most climate-vulnerable countries, especially to seasonal cyclones and flooding.⁹⁰

For Bangladesh's textiles industry, climate change poses several distinct risks:

- ▶ Increased input risk and financial risk from decreasing supply and/or increasing cost of critical production inputs such as cotton, caused by decreased availability of water and an increase in high-temperature days.⁹¹
- ▶ Heightened regulatory and reputational risks as more stringent climate-related policies and political pressures emerge.⁹²
- ▶ Increased physical and operational risk from disruptions to the labor force. The cumulative effects of shortages of safe drinking water, increased river bank erosion, and salt water intrusion in coastal areas are displacing hundreds of thousands of people to cities, potentially reaching six to eight million people by 2050.⁹³
- ▶ Flood damage alone is expected to affect 1,011 km of highways and 4,271 km of embankments by 2030 and nearly triple these figures by 2050, straining export infrastructure and increasing operational and market risks.⁹⁴

Recognizing the country's vulnerability to climate impacts, the Bangladesh government has focused its national climate plan on adaptation.⁹⁵ In prior years, the government has focused on protecting water resources, ecosystems and forests, crop agriculture, the fisheries and livestock sectors, as well as infrastructure and human health.⁹⁶

Climate change poses many risks to the textiles industry, including direct impacts on their operations and throughout their entire value chains. Businesses must therefore look to enhance the adaptive capacity throughout their entire supply chain and pay special attention to the extreme vulnerability of Bangladesh.

Manufacturing–Mexico

Over the past two decades, Mexico has claimed a place on the international economic stage as a fully integrated manufacturing center, which now accounts for 32% of the nation's economic output.⁹⁷

Mexico's geography makes it vulnerable to the effects of climate change, including increases in mean temperature and extreme weather events such as cyclones, floods and droughts.⁹⁸ Economic loss due to hydrometeorological events from 2000 through 2012 is estimated at USD 1.4 billion.⁹⁹

For Mexico's manufacturing industry climate change poses the following risks:

- ▶ Greater input and financial risk from resource scarcity and higher input costs as well as disruptions to energy supply.
- ▶ Operational risk from accelerated deterioration of materials, equipment and infrastructure.
- ▶ Greater physical risks of plant, product and infrastructure damage and supply chain disruptions from extreme weather events (e.g. heatwaves, floods, droughts, cyclones).
- ▶ Increased financial risk from higher insurance premiums.¹⁰⁰

Mexico's national climate plan includes strengthening the adaptive capacity of the most vulnerable municipalities, establishing early warning systems and risk management at every level of government, and reaching a 0% rate of deforestation by 2030, because forests provide mitigation benefits as well as ecosystem services that reduce social vulnerability to climate impacts.¹⁰¹ Mexico's national response to climate change has been to develop a complex framework of legislative and strategic instruments, including the adaptation piece of its national climate change strategy.¹⁰²

The manufacturing industry faces great climate-related operational and physical risk. Companies should focus on climate-proofing infrastructure and physical assets, especially in countries/regions that are prone to hazardous climate events.

Agriculture—Ethiopia

In 2014, agriculture represented 40.2% of Ethiopia's GDP and comprised 70% of the total value of the country's exports, with production totalling 27.7 million metric tons. Around 80% of Ethiopia's population is employed in the agricultural sector.¹⁰³ Given the country's reliance on agriculture, Ethiopia's biophysical and socio-economic vulnerability to climate change is a critical challenge, making resilience a national priority.

For Ethiopia's agriculture industry, climate change poses the following risks:

- ▶ Higher operational and input risks from continuously declining crop and livestock productivity resulting from extreme drought events and intense and irregular rainfall.¹⁰⁴
- ▶ Increased risk of resource-driven conflicts from climate stresses on the agricultural sector and water availability, with greater competition between the various users of water.
- ▶ Increased food insecurity, reduced domestic employment in the agricultural sector and degradation of infrastructure upon which the export industry relies.¹⁰⁵

Ethiopia's national climate plan improves upon previous national adaptation strategies, and specifically addresses increasing the resilience of the agriculture industry due to its vulnerability to higher operational and input risks. This includes Ethiopia's Climate-Resilient Green Economy strategy which aims to reduce vulnerability and ultimately achieve middle-income status by 2025.¹⁰⁶

The agriculture sector is highly vulnerable to the effects of climate change, especially in developing countries such as Ethiopia. Food, beverage and agriculture companies will need to assess climate risks and build resilience throughout their supply chains.

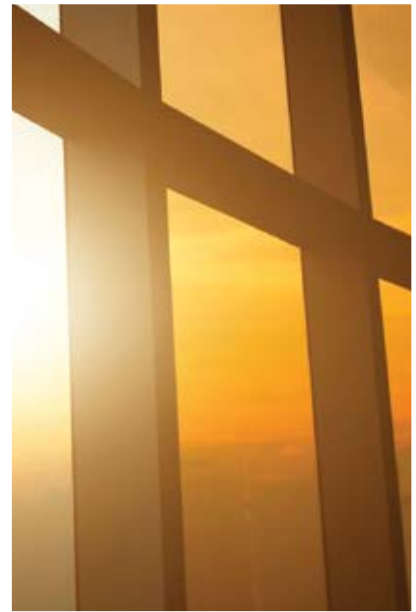
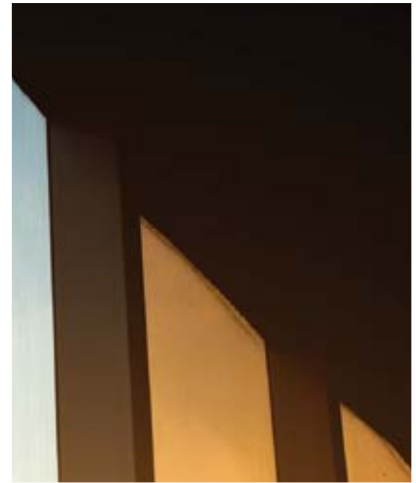
Insurance—Australia

Australia has a large and established insurance market which is at the forefront of climate risk management. The private sector insurance industry generates gross premiums of AUD 43.8 billion and has total assets of AUD 118.5 billion.¹⁰⁷

The insurance industry in Australia has already experienced climate impacts first-hand, such as coastal erosion, storm surges and gradual sea-level rise. Insurers have been hard hit financially by natural disaster claims over the last five years,¹⁰⁸ with many general insurance policies in Australia now specifically excluding coverage of such risks.¹⁰⁹

Australia's national climate plan recognizes that climate change poses a significant threat to its economic security, natural heritage and way of life as one of the hottest and driest continents.¹¹⁰ The plan includes a coastal risk management framework, and focuses on cities, farmers' resilience, water management and disaster management. Australia's Insurance Council works closely with the Australian Government on a number of climate-related risks, including climate-proofing infrastructure and removing tax disincentives on insurance products.¹¹¹

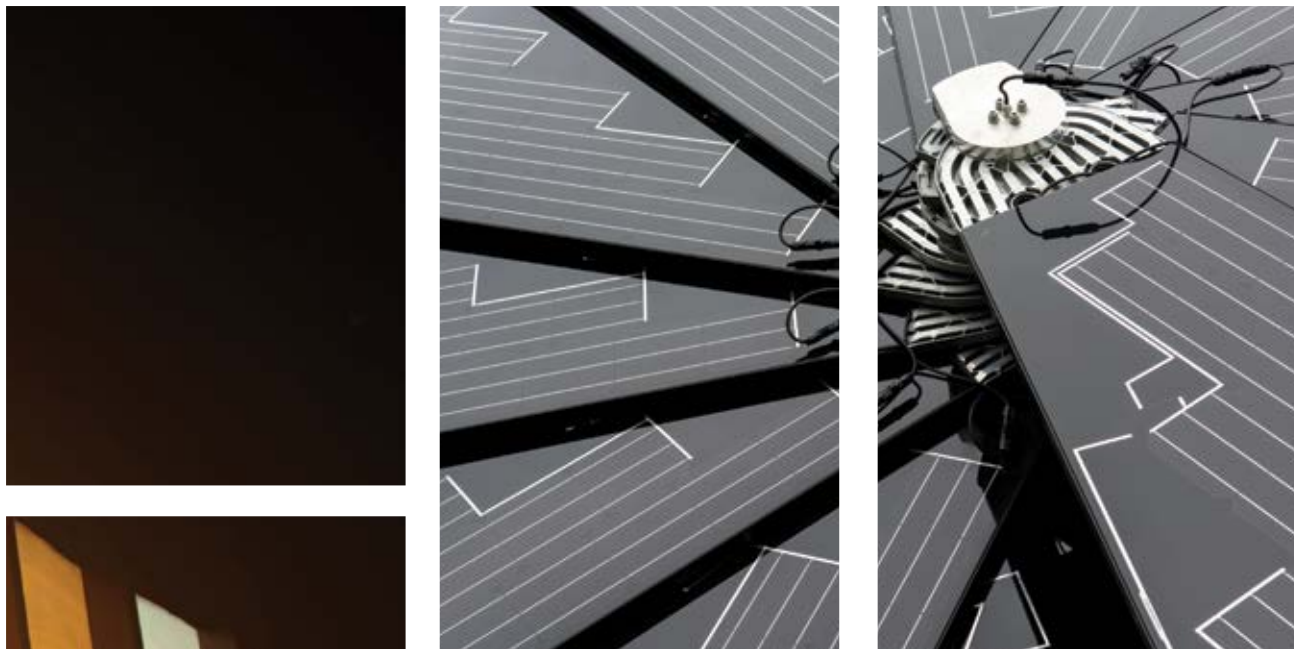
The insurance industry is already experiencing an increased number of claims from climate impacts and can expect an upward trend in coming years. By innovating and scaling up the deployment of climate-related products, insurance companies will improve their own resilience and that of their clients.



BE BOLD AND BE RECOGNIZED

The cost of not taking climate action is growing while the cost of action is falling. Leading businesses taking bold climate action have benefited from an average 27% internal rate of return on their low carbon investments,¹¹² alignment with incoming climate and energy regulation, first-mover advantages in low carbon markets, more resilient operations and supply chains, and a stronger reputation among employees, consumers, and other stakeholders.

Climate action drives innovation, creates new and better job opportunities, helps to grow the economy, and increases competitiveness in the global marketplace.



THE ACTION AGENDA

In Paris, the “Action Agenda” showcased leading initiatives on renewable energy, energy access and efficiency, agriculture, forests, transport, resilience, private finance, innovation, and short-lived climate pollutants.¹¹³ Each annual UN climate conference through 2020 will similarly showcase the latest and greatest in private sector climate action, offering a platform for business leadership and best practices.¹¹⁴

The NAZCA portal, which registers non-state climate commitments, counts nearly 5,000 commitments from companies and nearly 1,000 from investors.¹¹⁵ Among these are the gold standard commitments taken by climate leaders as part of the We Mean Business campaign.¹¹⁶

In recognition of the importance of accelerating climate action before 2020, when countries will update or submit new national climate plans, two high-level political champions representing the incoming and outgoing UN climate conference presidencies will lead the scale-up of climate action. The first two champions are French Climate Ambassador Laurence Tubiana and Moroccan Environment Minister Hakima el Haite, who will steer both the Action Agenda and technical work at the UN to scale-up solutions.¹¹⁷

WE MEAN BUSINESS

We Mean Business works directly with companies and investors to catalyze ambitious climate action. In the lead up to Paris, more than 500 of the world’s largest and most influential companies and investors made over 800 commitments to action through We Mean Business and its partners. From setting emissions reduction targets in line with climate science, to setting 100% renewable energy goals, to implementing an internal carbon price, to decarbonizing investment portfolios, to working on Low Carbon Technology Partnership initiatives, these companies and investors helped to set a new gold standard for bold climate action.

After Paris, the business community has a clear policy signal from governments that it is time to scale-up low carbon investment and bold solutions to climate change. To meet this need for scale, We Mean Business will share a more comprehensive set of climate actions to spur action by many more companies and investors. **Over the next few years, the actions taken by the business community have the potential to help course-correct global emissions and put the world on track to hold warming well below 2°C.**

ENDNOTES

- 1 Paris Agreement, Article 2.1(a).
- 2 Paris Agreement, Article 4.1.
- 3 Paris Agreement, Article 2.1(c).
- 4 Paris Agreement, Article 2.1(b).
- 5 Paris Agreement, Article 4.1.
- 6 For a general discussion on the 2°C target and net zero global emissions see for example, Höhne, N., den Elzen, M. and Admiraal, A. *Net Phase Out of Global Greenhouse Gas Emissions: Briefing*, NewClimate Institute, 2015. <https://newclimateinstitute.files.wordpress.com/2015/02/phase-out-factsheet-2015-02-111.pdf>.
- 7 Paris Agreement, Article 4.2.
- 8 Paris Agreement, Article 4.2.
- 9 Paris Agreement, Articles 4.2 and 4.9.
- 10 UNFCCC Decision 1/CP.21, paras. 23 and 24; Paris Agreement, Article 4.9.
- 11 Paris Agreement, Article 4.3.
- 12 Paris Agreement, Articles 14.1 and 14.2. For example, the first global stocktake will occur in 2023, two years before 2025 which is when the next round of revised NDCs are due.
- 13 Paris Agreement, Articles 4.9 and 14.3. Noting that the modalities of the global stocktake are still being developed by the UNFCCC.
- 14 Paris Agreement, Article 4.19.
- 15 UNFCCC Decision 1/CP.21, preamble, paras. 55 and 134.
- 16 UNFCCC Decision 1/CP.21, para. 115. Noting that the target for USD 100 billion by 2020 was an idea which was born out of COP15 and COP16 in Copenhagen and Cancun respectively.
- 17 UNFCCC Decision 1/CP.21, para. 54.
- 18 Paris Agreement, Articles 9.1 and 9.5.
- 19 Paris Agreement, Article 9.3.
- 20 Brookings Institution, *COP21 at Paris: What to expect: The issue, the actors, and the road ahead on climate change*, 2015 (9, 19). <http://www.brookings.edu/~media/Research/Files/Reports/2015/11/16-paris-climate-talks/COP21atParis.pdf?la=en>
- 21 For example, the Credit Agricole Corporate & Investment Bank and the Bank of America recently announced climate finance initiatives of USD 60 billion and USD 125 billion respectively. <http://mediacommun.ca-cib.com/sitegenic/medias/DOC/94509/2015-12-08-credit-agricole-cib-annonce-l-atteinte-des-quatre-objectifs-climat-fixes-en-2014-en.pdf>; <http://newsroom.bankofamerica.com/press-releases/environment/bank-america-announces-industry-leading-125-billion-environmental-busines>
- 22 World Resources Institute, CAIT Climate Data Explorer Paris Contributions Map. <http://cait.wri.org/indc/>
- 23 Paris Agreement, Article 7.9.
- 24 Paris Agreement, Article 7.9(e).
- 25 UNFCCC Decision 1/CP.21, para. 100(a)(ii); Paris Agreement, Articles 7.10, 7.11, 7.14(b) and 13.8.
- 26 UNFCCC Decision 1/CP.21, para. 91; Paris Agreement, Articles 4.13 and 13.7.
- 27 UNFCCC Decision 1/CP.21, para. 91.
- 28 Paris Agreement, Articles 13.11 and 13.12.
- 29 Paris Agreement, Article 4.13.
- 30 Paris Agreement, Article 13.11.
- 31 Paris Agreement, Articles 6.1 and 6.2.
- 32 Paris Agreement, Article 6.4.
- 33 According to the International Energy Agency, global energy-related CO2 emissions stayed flat for the second year in a row in 2015. See International Energy Agency, *Decoupling of Global Emissions and Economic Growth Confirmed*, 2016. <https://www.iea.org/newsroomandevents/pressreleases/2016/march/decoupling-of-global-emissions-and-economic-growth-confirmed.html>
- 34 World Resources Institute, CAIT Climate Data Explorer. <http://cait.wri.org/indc/>
- 35 Bloomberg New Energy Finance, *Clean Energy Defies Fossil Fuel Price Crash to Attract Record \$329BN Global Investment in 2015*, 2016. <http://about.bnef.com/press-releases/clean-energy-defies-fossil-fuel-price-crash-to-attract-record-329bn-global-investment-in-2015/>
- 36 Bloomberg News, *By the Numbers: China's Clean Energy Investments Show Big Strides*, 2015. <http://www.bloomberg.com/news/articles/2015-11-02/by-the-numbers-china-s-clean-energy-investments-show-big-strides>

- 37 The White House, *Fact Sheet: U.S.-China Joint Announcement on Climate Change & Clean Energy Cooperation*, 2014. <https://www.whitehouse.gov/the-press-office/2014/11/11/fact-sheet-us-china-joint-announcement-climate-change-and-clean-energy-c>
- 38 Paris Agreement, Article 4.2.
- 39 International Monetary Fund, *World Economic Outlook Database: Report for Selected Countries and Subjects*, April 2016.
- 40 UNFCCC, *INDCs as Communicated by Parties*, 2016. <http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx>
- 41 ECOFYS, *Pathways from Paris: Assessing the INDC Opportunity*, 2016 (15).
- 42 ECOFYS, *Pathways from Paris: Assessing the INDC Opportunity*, 2016 (15).
- 43 ECOFYS, *Pathways from Paris: Assessing the INDC Opportunity*, 2016 (19).
- 44 International Energy Agency, *2015 World Energy Outlook*, 2015
- 45 Bloomberg New Energy Finance, *New Energy Outlook 2015*, 2015. http://about.bnef.com/content/uploads/sites/4/2015/06/BNEF-NEO2015_Executive-summary.pdf
- 46 The basis for the analysis was the historical data on annual investment in renewables in the power sector from the IEA World Energy Investment Outlook 2014 (for 2000-2013), and the predicted cumulative investment in renewables in the power sector for 2015-2025 and 2026-2040 from the IEA World Energy Outlook 2015 (New Policies Scenario). Data were converted to USD 2014 per year to be comparable between the two reports. See International Energy Agency, *World Energy Investment Outlook*, 2014; and International Energy Agency, *World Energy Outlook*, 2015.
- 47 ClimateWorks, *Faster and Cleaner: Decarbonization in the power and transport sectors is surpassing predictions*, 2015, <http://www.climateworks.org/report/faster-and-cleaner-decarbonization-in-the-power-and-transport-sectors-is-surpassing-predictions/>; and ClimateWorks, *Carbon Transparency Initiative: Methodology for the power and transport sectors*, 2015. <http://www.climateworks.org/wp-content/uploads/2015/11/CTI-Methodology-for-the-power-and-transport-sectors.pdf>.
- 48 ClimateWorks, *Faster and Cleaner: Decarbonization in the power and transport sectors is surpassing predictions*, 2015, <http://www.climateworks.org/report/faster-and-cleaner-decarbonization-in-the-power-and-transport-sectors-is-surpassing-predictions/>; and ClimateWorks, *Carbon Transparency Initiative: Methodology for the power and transport sectors*, 2015. <http://www.climateworks.org/wp-content/uploads/2015/11/CTI-Methodology-for-the-power-and-transport-sectors.pdf>.
- 49 World Resources Institute, *5 Key Takeaways from India's New Climate Plan (INDC)*, 2015. <http://www.wri.org/blog/2015/10/5-key-takeaways-india%E2%80%99s-new-climate-plan-indc>
- 50 The White House, *Fact Sheet: U.S.-China Joint Announcement on Climate Change & Clean Energy Cooperation*, 2014. <https://www.whitehouse.gov/the-press-office/2014/11/11/fact-sheet-us-china-joint-announcement-climate-change-and-clean-energy-c>
- 51 E3G, *Pulling Ahead on Clean Technology: China's 13th Five Year Plan Challenges Europe's Low Carbon Competitiveness*, 2016. https://www.e3g.org/docs/E3G_Report_on_Chinas_13th_5_Year_Plan.pdf
- 52 Goldman Sachs, *The Low Carbon Economy*, 2015.
- 53 UNFCCC, *INDCs as Communicated by Parties*, 2016. <http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx>
- 54 UNFCCC, *INDCs as Communicated by Parties*, 2016. <http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx>
- 55 U.S. Energy Information Administration, *Frequently Asked Questions*, 2015. <http://www.eia.gov/tools/faqs/faq.cfm?id=92&t=4>; ECOFYS, *Pathways from Paris: Assessing the INDC Opportunity*, 2016.
- 56 The White House, *Administration Takes Historic Action to Reduce Methane Emissions for the Oil and Gas Sector*, 2016. <https://www.whitehouse.gov/blog/2016/05/12/administration-takes-historic-action-reduce-methane-emission-oil-and-gas-sector>
- 57 European Commission, *Climate Action: 2030 Climate & Energy Framework*, 2016. http://ec.europa.eu/clima/policies/strategies/2030/index_en.htm
- 58 UNFCCC, *INDCs as Communicated by Parties*, 2016. <http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx>
- 59 Project Syndicate, *Why Renewables Are Not Enough*, 2016. <https://www.project-syndicate.org/commentary/paris-climate-agreement-insufficient-by-ajay-mathur-and-adair-turner-2016-05>
- 60 The basis for the analysis was a comparison of the Levelized Costs of Energy (LCOE) of different technologies as reported by the BNEF New Energy Outlook 2015. We have assumed that one technology becomes more cost competitive when its LCOE becomes lower than that of the reference technology. It is important to note that this does not reflect the full complexity of energy system dynamics but gives a first order estimate of competitiveness. See Bloomberg New Energy Finance, *New Energy Outlook*, 2015.
- 61 Annual investments in energy efficiency for the periods 2015-2020, 2025-2030 and 2035-2040 were obtained from the IEA World Energy Outlook 2015 (New Policies Scenario). The split between transport, buildings and industry for the period 2015-2030 was taken from the IEA World Energy Outlook Special Report 2015 and applied to the three aforementioned periods to get an estimate for the split in investments in each of these periods. See International Energy Agency, *World Energy Outlook - New Policies Scenario*, 2015.

- 62 International Energy Agency, *World Energy Outlook 2015*, 2015. http://www.iea.org/publications/freepublications/publication/WEB_WorldEnergyOutlook2015ExecutiveSummaryEnglishFinal.pdf
- 63 ECOFYS, *Pathways from Paris: Assessing the INDC Opportunity*, 2016.
- 64 The Climate Group, *EP100 Showcases the world's most influential businesses committed to doubling their energy productivity*. <http://www.theclimategroup.org/what-we-do/programs/ep100/>
- 65 Blackrock, *The Price of Climate Change Global Warming's Impact On Portfolios*, 2015. <https://www.blackrock.com/corporate/en-mx/literature/whitepaper/bii-pricing-climate-risk-international.pdf>
- 66 Greengage Environmental, *Paris 2015 UN Climate Change Conference COP21 CMP11*, 2016. <http://www.greengage-env.com/company/cop21-business-buildings-sector/>
- 67 The City Fix, *Buildings and National Climate Commitments: What You Need to Know Before the Global Climate Change Conference (COP21)*, 2015. <http://thecityfix.com/blog/buildings-national-commitments-global-climate-change-conference-cop21-shannon-hilsey-jennifer-layke-eric-mackres/>
- 68 BSR, COP21 commitments.
- 69 International Energy Agency, *Energy Efficiency Market Report 2015: Market Trends and Medium-Term Prospects*, 2015. <https://www.iea.org/publications/freepublications/publication/MediumTermEnergyefficiencyMarketReport2015.pdf>
- 70 Shell International BV, *A Better Life With a Healthy Planet*, 2016.
- 71 See for example World Business Council for Sustainable Development initiatives on chemicals and cement: Low Carbon Technology Partnerships Initiative, CEO Statement, 2015. <http://lctpi.wbcd.org/wp-content/uploads/2015/11/LCTPI-Chemicals-CeoStatement-Final.pdf>
- 72 UNFCCC, *INDCs as Communicated by Parties*, 2016. <http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx>
- 73 International Energy Agency, *World Energy Outlook Special Report: Energy and Climate Change*, 2015
- 74 Paris Process on Mobility and Climate, *Intended Nationally-Determined Contributions (INDCs) Offer Opportunities for Ambitious Action on Transport and Climate Change*, 2015. <http://ppmc-cop21.org/wp-content/uploads/2015/06/INDC-Report-Final-Version-2015-11-25-unformatted-2.pdf>
- 75 The World Bank, *Transport at COP21: Part of the Climate Change Solution*, 2015. <http://www.worldbank.org/en/topic/transport/brief/connections-note-28>
- 76 UNFCCC, *INDCs as Communicated by Parties*, 2016. <http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx>
- 77 World Bank, *Carbon Pricing Watch 2016*, 2016.
- 78 The World Bank, *State and Trends of Carbon Pricing 2015 (English)*, 2015. <http://documents.worldbank.org/curated/en/2015/09/25053834/state-trends-carbon-pricing-2015>
- 79 CDP, *Putting A Price on Risk: Carbon Pricing in the Corporate World*, 2015. <https://www.cdp.net/CDPResults/carbon-pricing-in-the-corporate-world.pdf>
- 80 CDP, *Putting A Price on Risk: Carbon Pricing in the Corporate World*, 2015. <https://www.cdp.net/CDPResults/carbon-pricing-in-the-corporate-world.pdf>
- 81 CDP, *Putting A Price on Risk: Carbon Pricing in the Corporate World*, 2015. <https://www.cdp.net/CDPResults/carbon-pricing-in-the-corporate-world.pdf>
- 82 CDP, *Putting A Price on Risk: Carbon Pricing in the Corporate World*, 2015. <https://www.cdp.net/CDPResults/carbon-pricing-in-the-corporate-world.pdf>
- 83 World Economic Forum, *The Global Risks Report 2016*, 11th Edition, 2016. <http://www3.weforum.org/docs/Media/TheGlobalRisksReport2016.pdf>
- 84 BSR, *From Agreement to Action: Mobilizing Suppliers Toward a Climate-Resilient World*, 2016. <http://www.bsr.org/en/our-insights/report-view/bsr-cdp-climate-change-supply-chain-report-2015-2016>
- 85 BSR, *Creating an Action Agenda for Private-Sector Leadership on Climate Change*, 2015. <http://www.bsr.org/reports/bsr-bccw-creating-action-agenda-private-sector-leadership-climate-change.pdf>
- 86 BSR, *Climate Resilience and the Role of the Private Sector in Thailand*, 2015. http://www.bsr.org/reports/BSR_Climate_Resilience_Role_Private_Sector_Thailand_2015.pdf
- 87 World Bank Group, *Towards New Sources of Competitiveness in Bangladesh*, 2016. <https://openknowledge.worldbank.org/bitstream/handle/10986/22712/9781464806476.pdf?sequence=1&isAllowed=y>
- 88 ITC, *Trade Map: List of Products Imported by Japan*. http://www.trademap.org/Product_SelCountry_TS.aspx
- 89 International Labour Organisation, *Improving Working Conditions in the Ready Made Garment Industry: Profound and Achievements*, 2016. http://www.ilo.org/dhaka/Whatwedo/Projects/WCMS_240343/lang--en/index.htm
- 90 Verisk Maplecroft, *Latest Product News*. <http://maplecroft.com/about/news/ccvi.html>
- 91 ICAC 72nd Plenary Meeting, *Global Warming and Cotton Productivity*, 2013. https://www.icac.org/getattachment/mtgs/Plenary/72nd-Plenary/Presentations/Pap-DOosterhuis_GWarming.pdf
- 92 Bangladesh Textiles Today, *Textile Industries in Bangladesh: A Rising Environmental Degradation Down the Drains*, 2008. <http://www.textiletoday.com.bd/textile-industries-in-bangladesh-a-rising-environmental-degradation/>

- 93 Asian Tiger Capital Partners, *A Strategy to Engage the Private Sector in Climate Change Adaptation in Bangladesh*, 2010. http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/IFC_pres_CC_PS_V8_Sep12010-IFC_%20sk.pdf
- 94 Ministry of Environment and Forests, *Climate Change And Infrastructure in Bangladesh: Information Brief*. <https://cmsdata.iucn.org/downloads/infrastructure.pdf>
- 95 Ministry of Environment and Forests (MOEF), *Intended Nationally Determined Contributions (INDC)*, 2015. http://www4.unfccc.int/submissions/INDC/Published%20Documents/Bangladesh/1/INDC_2015_of_Bangladesh.pdf
- 96 United National Framework Convention on Climate Change, *Submitted National Communications from non-Annex I Parties*. http://unfccc.int/national_reports/non-annex_i_natcom/submitted_natcom/items/653.php
- 97 Deloitte, *Competitiveness: Catching the Next Wave, Mexico*, 2015. <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-gbc-mexico-competitiveness-report-english.pdf>
- 98 The World Bank Social Development Department, *Municipal Vulnerability to Climate Change and Climate-Related Events in Mexico*, 2013. <https://openknowledge.worldbank.org/bitstream/handle/10986/15560/wps6417.pdf?sequence=1>
- 99 The Government of the Republic of Mexico, *Intended Nationally Determined Contribution*, 2015. <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mexico/1/MEXICO%20INDC%2003.30.2015.pdf>
- 100 Smith, M, *The Manufacturing Sector – Climate Change Risk and Opportunity Assessment. An Educational Module to Help Identify and Implement Climate Change Adaptation and Mitigation Opportunities*, 2013. <http://www.sustainability.edu.au/material/teaching-materials-document/317/download>
- 101 The Government of the Republic of Mexico, *Intended Nationally Determined Contribution*. <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mexico/1/MEXICO%20INDC%2003.30.2015.pdf>
- 102 Federal Government of Mexico, *National Climate Change Strategy 10-20-40 Vision*, 2013. http://mitigationpartnership.net/sites/default/files/encc_englishversion.pdf
- 103 AfDB, OECD, UNDP, *African Economic Outlook: Ethiopia*, 2016. www.africaneconomicoutlook.org/sites/default/files/.../Ethiopia_GB_2016_WEB.pdf
- 104 Netherlands Commission for Environmental Assessment Dutch Sustainability Unit, *Climate Change Profile: Ethiopia*, 2015. http://api.commissiemer.nl/docs/os/i71/i7152/climate_change_profile_ethiopia.pdf
- 105 Food and Agriculture Organisation, *Strengthening Capacity for Climate Change Adaptation in the Agriculture Sector in Ethiopia*, 2010. <http://www.fao.org/docrep/014/i2155e/i2155e00.pdf>
- 106 Federal Democratic Republic of Ethiopia, *Intended Nationally Determined Contribution (INDC) of the Federal Democratic Republic of Ethiopia*, 2015. <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Ethiopia/1/INDC-Ethiopia-100615.pdf>
- 107 Insurance Council of Australia, *About Us*, 2016. <http://www.insurancecouncil.com.au/about-us>
- 108 IBIS World, *General Insurance in Australia: Market Research Report*, 2016. <http://www.ibisworld.com.au/industry/default.aspx?indid=526>
- 109 Insurance Council of Australia, *Climate Change - Coastal Property Risks and Insurance*, 2010. <http://www.insurancecouncil.com.au/issue-submissions/industry-in-focus/coastal-vulnerability-risks>
- 110 Federal Government of Australia, *Australia's Intended Nationally Determined Contribution to a New Climate Change Agreement*, 2015. <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Australia/1/Australias%20Intended%20Nationally%20Determined%20Contribution%20to%20a%20new%20Climate%20Change%20Agreement%20-%20August%202015.pdf>
- 111 Insurance Council of Australia, *Climate Change - Coastal Property Risks and Insurance*, 2010. <http://www.insurancecouncil.com.au/issue-submissions/industry-in-focus/coastal-vulnerability-risks>
- 112 We Mean Business, *The Climate has Changed*, 2014. http://www.wemeanbusinesscoalition.org/sites/default/files/The%20Climate%20Has%20Changed_2.pdf
- 113 Lima-Paris Action Agenda. <http://newsroom.unfccc.int/lpaa>
- 114 UNFCCC Decision 1/CP.21, paras. 110 and 120.
- 115 More information on NAZCA can be found here: <http://climateaction.unfccc.int/>
- 116 Take action with We Mean Business at: <http://www.wemeanbusinesscoalition.org/take-action>
- 117 UNFCCC Decision 1/CP.21, para. 122.

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economic opportunity through bold climate action

We Mean Business is a coalition of organizations working with thousands of the world's most influential businesses and investors. These businesses recognize that the transition to a low carbon economy is the only way to secure sustainable economic growth and prosperity for all. To accelerate this transition, we have formed a common platform to amplify the business voice, catalyze bold climate action by all, and promote smart policy frameworks.

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