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BlackRock®

Infrastructure and sustainability

Insurance background

Regulatory, financial and reputational drivers changing insurers' motivations around sustainable investing

Regulatory and Governance Drivers

EU, Sustainable Finance Action Plan
aims to encourage capital flows to sustainable investments and manage financial risks

France, Article 173
requires asset owners and asset managers to disclose information on exposure to climate risks[1]

PRA focus on climate change and **understanding** climate risk as a prudential factor (stress testing)[2]

Real Asset Sustainable Investment Themes[3]

Climate change
Increased **physical risk** (storm intensity, flooding, etc) and **transition risk** (changing regulation, preferences, technology)

Resource efficiency
Higher demand for resource consumption coupled with regulation, limited natural reserves, changing consumer preferences putting pressure on supply

Demographic change
Long term and physical nature of real assets emphasises importance of alignment with future social trends and demographic changes

Reputation, Values and Risk Management

Reputation Management
institutional investors emphasize the importance of ESG to corporate performance and see ESG as a risk and reputation issue[4]

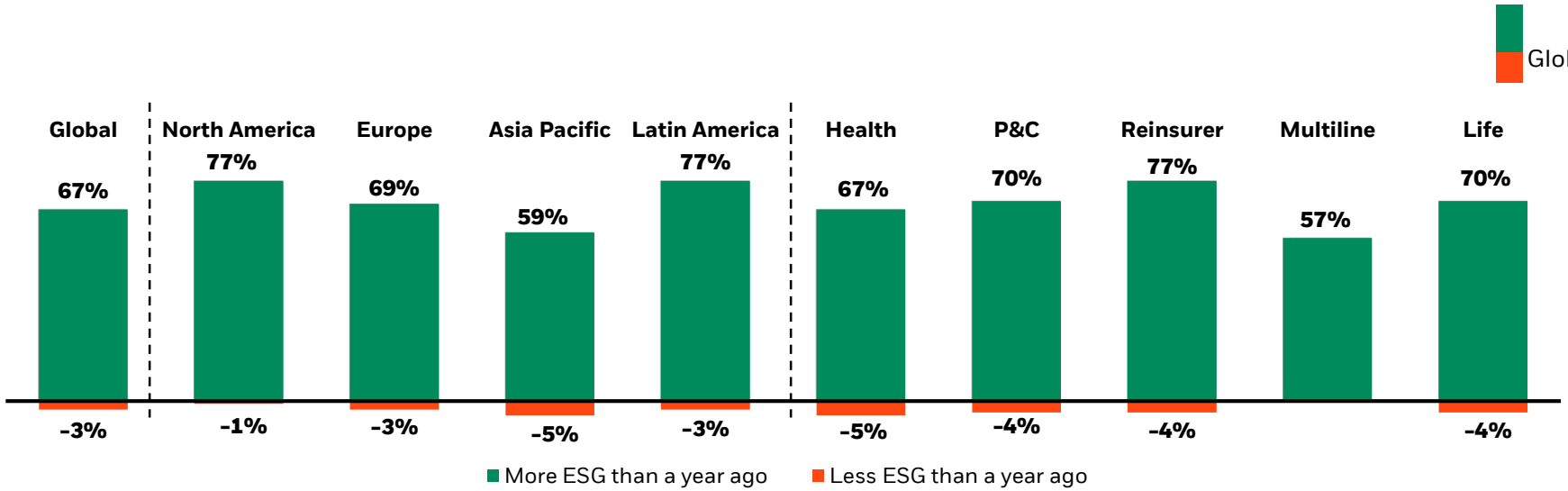
USD 30 – 40T
transferred to women & millennials over the next few decades[5] exacerbates changing consumer preferences

ESG as a value driver and risk management tool
Better disclosures and improving data enhancing ability to analyse ESG risk factors

1.European SIF; December 2016. 2. PRA Supervisory Statement SS3/19.3. BlackRock Real Assets Sustainable Investing Report. 4. KPMG. ESG, risk, and return, A board's-eye view. (2018). 5. Swipe right to invest: millennials and ESG, the perfect match? MSCI, November 2017;; 4 The opinions expressed are as of date and are subject to change at any time due to changes in market or economic conditions. The above descriptions are meant to be illustrative. There is no guarantee that any forecasts made will come to pass.

The vast majority of insurers now incorporate ESG considerations

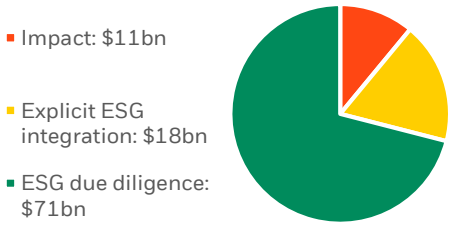
Adoption of ESG : by region and business line



Source: Blackrock Global Insurance Report 2019, Q29 Relative to one year ago, how would you describe your firm's focus on incorporating ESG considerations into its investment strategy and process?
Base: Total sample (n=360) North America (n=70) Europe (n=150) APAC (n=110) LatAm (n=30) Health (n=66) P&C (n=67) Reinsurer (n=52) Multiline (n=68) Life (n=107)

Dedicated institutional RFPs and meetings corroborate this shift

- **An indicative $99bn of ESG related assets in motion:**



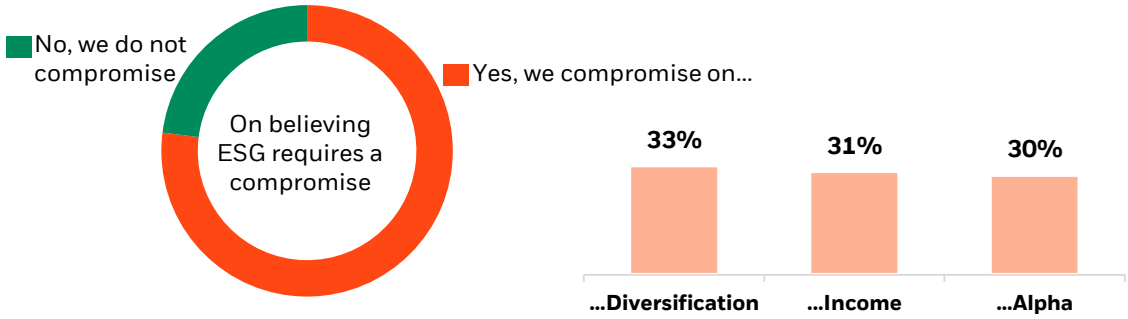
- **1390 ESG related meetings in 2018 across the institutional business**
- **Concentrated in Europe, but with significant interest across the globe, including North America and Asia Pacific**

Source: Blackrock Institutional Client Business as of 30 April 2019. For illustrative purposes only

Concerns remain over potential trade offs and challenges around implementation

Trade off concerns remain

77% of total respondent believe they compromise on either diversification, income and/or alpha outcomes when considering ESG investments.



Source: BlackRock Global Insurance Report 2019, Q30 Do you think that your firm has to compromise to achieve its ESG goals?
Base: Total sample (n=360) North America (n=70) EMEA (n=150) APAC (n=110) LatAm (n=30) *Note more than one answer possible*

Practical challenges in implementation

- **Dynamically evolving regulatory landscape; complexity and reporting requirements**
- **While data is improving, there are still challenges with quality**
- **Lack of universally defined terms within ESG and sustainability**
- **Lack of regulatory consistency globally**
- **Expertise and ability to model ESG variables**

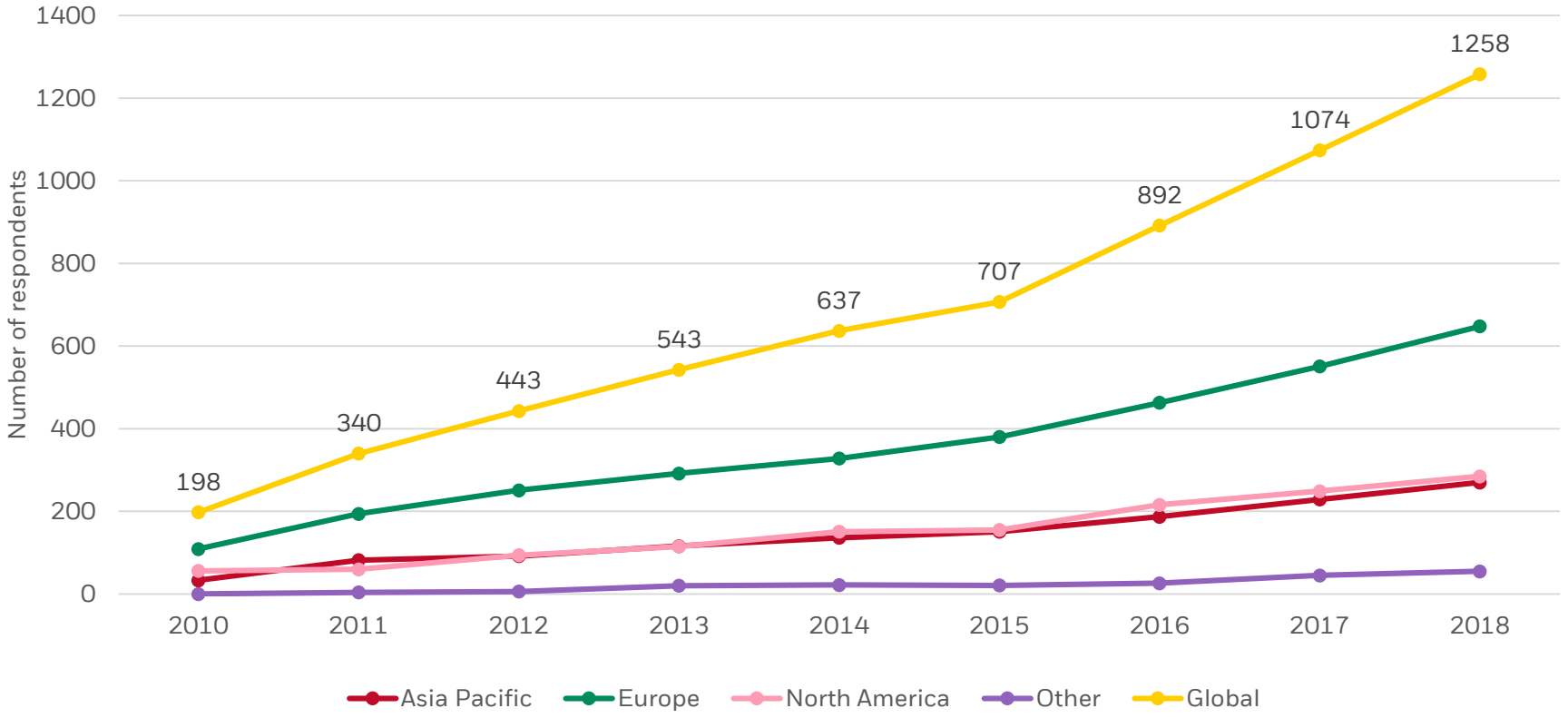
Sustainability in infrastructure

ICBH0919E-964397-6/22

Dynamic evolution of sustainability in real assets

*"BlackRock Real Assets believes that a robust, integrated approach to sustainable investing is essential in **preserving and enhancing the value** of our assets throughout their investment lifecycle. Given the long term and physical nature of our real assets investments, we consider effective ESG assessment and management to be a **fundamental component of risk management**."*[1]

GRESB response rate development for real estate and infrastructure[2]



Source: 1. BlackRock Real Assets Sustainable Investing Policy 2019. 2. GRESB, January 2019. GRESB is the global environmental, social and governance benchmark for real assets.

1.) Building resilience

Improving the resilience of investments

Dictionary definition *Synonyms: strength, toughness, adaptability, hardiness*	• Something that is resilient is strong and not easily damaged by being hit, stretched, or squeezed and able to recover easily and quickly from unpleasant or damaging events • Doing better than you'd think given the circumstances • The capacity to recover quickly from difficulties; toughness, bouncing back and bouncing forward

Market resilience

Real Assets investors are looking for stable returns/cashflows that are not procyclical & as such act as a natural diversifier to their liquid portfolios and provide long term portfolio ballast.

Sustainability

Real Assets need to survive and thrive in the face of social and environmental shocks & stressors, including – but not limited to - climate change.

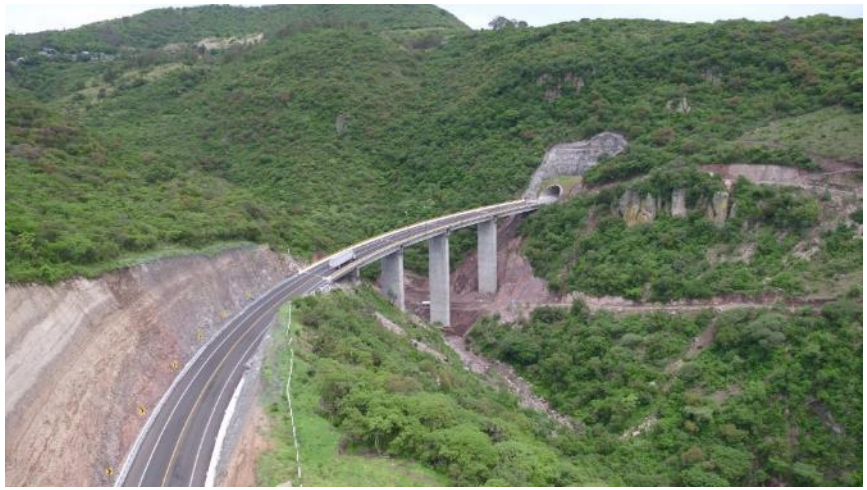
Idiosyncratic risk protection

Real Assets are subject to a host of idiosyncratic risks, including counterparty, regulatory, geopolitical risks. These issues need to be robustly addressed for all investments.

Source: BlackRock, as of September 2019. For illustrative purposes only.

Assessing resilience comprehensively: Assets and liabilities

TOLL ROAD – MEXICO



- Carried out an extensive review of the structural design of our greenfield projects in Mexico following last year's earthquake
- Implemented reinforcements to one of our toll roads to better withstand hurricane-related flooding.

INDUSTRIAL COMPLEX – FLORIDA, US

- Fitted high-impact glass to address hurricane risk, where the applicable code required only shutters to cover windows
- Installed reflective single-ply roofs to improve heat loads in the warehouse to address high temperature risks.

Source: BlackRock, as of September 2019. For illustrative purposes only.

2.) Achieving impact

Sustainability and impact

Case study: impact measurement approach in global renewable power strategy

We take a three-step approach with the ultimate goal of calculating impact that can be measured in dollars and compared across investments. Three steps are outlined below:

1

Identify key Sustainable Development Goals and associated metrics to be targeted for impact

- Using the Global Impact Investing Network (GIIN)'s IRIS metrics as an effective accounting framework
- Using metrics widely recognized by the industry brings standardization to our framework
- IRIS metrics are mapped to the SDGs, allowing us to apply an SDG lens to our reporting framework

2

Measure impact created on a consistent and comparable dollarized basis for every potential investment

- Using BlackRock-defined methodology to translate multiple units of impact (tons of CO_2, jobs created, water saved, etc.) to dollars
- Impact measurement can be aggregated to provide a topline figure for impact achieved (or targeted), which can then be mapped to SDGs and compared against global targets
- Seeks to answer the question "what would it cost to achieve this impact today?"

3

Integrate measure of impact into each stage of the investment decision-making process

- Normalizing dollarized impact by dividing level of impact (in dollars) by the size of total investment (in dollars) to calculate the Impact Multiple (IM) for each investment, allowing us to compare dollars invested to dollars of impact created
- Calculating the IM creates metrics that are comparable across different investments
- This enables application throughout the investment process—not just as a post-investment reporting tool

Source: BlackRock, as of September 2019. Investment process is subject to change and provided here for illustrative purposes only.

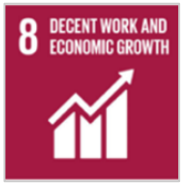
Targeted Sustainable Development Goals

Case study: Measurable & comparable impact in Global Renewable Power II portfolio

We use the UN Sustainable Development Goals (UN SDGs) as a framework to determine the specific areas of impact we measure.

US$2bn
Impact Return

90,510,157 MWh
Clean energy produced

51,400 Olympic swimming pools of water saved		**Ensure availability and sustainable management of water and sanitation for all** **Impact:** water savings from renewable power generation
9,243,973 Homes powered with clean energy		**Ensure access to affordable, reliable, sustainable and modern energy for all** **Impact:** greenhouse gas emissions avoided*
6,362 Jobs Created locally through project construction and operation		**Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all** **Impact:** job creation
US$114m Local community contribution		**Make cities and human settlements inclusive, resilient and sustainable** **Impact:** community engagement
34,734,540 Metric tons CO_2 emissions avoided		**Take urgent action to combat climate change and its impact** **Impact:** greenhouse gas emissions avoided*

*UN SDGs 7 & 13 will both be measured by the same metric: greenhouse gas emissions avoided. Source: BlackRock, data as of June 2019. Please refer to the appendix for methodology and metrics. Metrics represent impact created over fund life.
~~GRP II is closed to new investors~~. Sustainable Development Goal images sourced from UN.org, April 2019.

Climate risk

A sustainability challenge

Climate risk as a sustainability challenge to infrastructure

- Our society is increasingly realizing the threat that climate change poses. Physical risks associated with climate change are expected to increase significantly and continue to impact real assets.
- It is also important to consider the risks and opportunities that are presented from both local and global efforts to mitigate climate change and transition to a low carbon economy.
- **It is, therefore, critical that investments are resilient to such climate risks, but that investment strategies also support the energy transition.**

Physical impact of climate change and resource availability

In 2018 US experienced increased hurricane activity on the East Coast where majority of US power plants are located

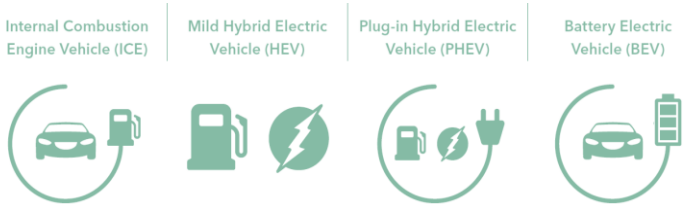
Direct impacts:

- Reduced economic activity
- Higher insurance premiums
- Damage to Infrastructure
- Social costs – food shortages etc
- Displacement of workforce etc

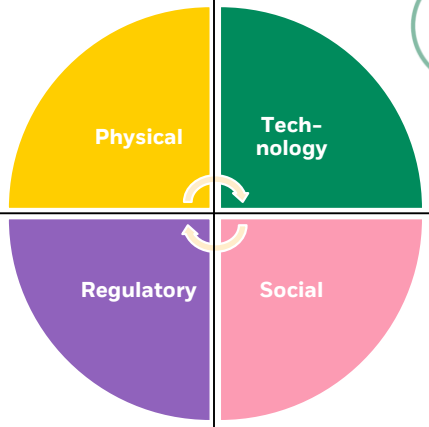
"The frequency of extreme weather events causing $1 billion or more in losses has risen sharply over the past decade"[1]

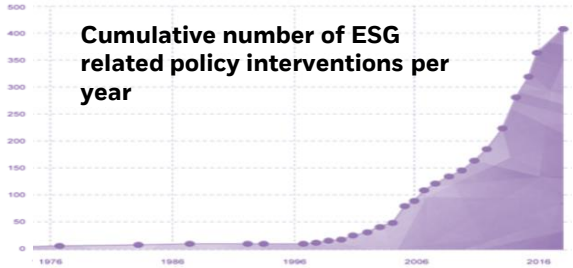
Development of technology supporting low carbon transition

Innovation and advancement in renewable energy, electric vehicles and batteries will impact incumbent industries



"By 2040, 55% of all new car sales and 33% of the global fleet will be electric."
Bloomberg New Energy Finance





Source: PRI responsible investment regulation database

"BP has bowed to pressure from investors, including the HSBC, L&G and the Church of England, by backing a plan to explain how its strategy and investments are consistent with the Paris climate agreement."
BBC Feb 2019

ClimateAction 100+

ShareAction

Governments using policy to help meet the objectives of COP21, such as the EU Sustainable Finance Action Plan

Policy and regulation efforts to stem climate change

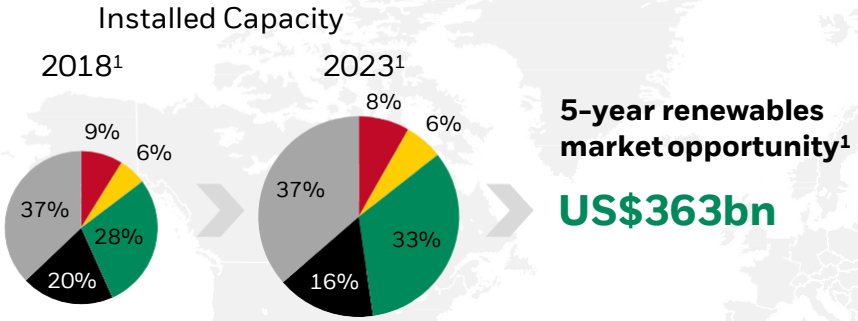
Increasing pressure on company boards to support climate change resolutions

Social and Corporate Awareness

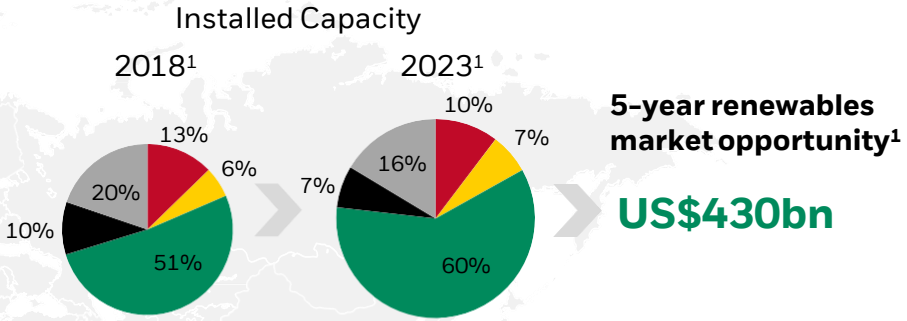
Source : BlackRock Real Assets Sustainable Investing Report, March 2019. [2]Source: BlackRock Adapting Portfolios to Climate Change (September 2016)

Example: Creating global opportunities for investors in renewable energy and infrastructure

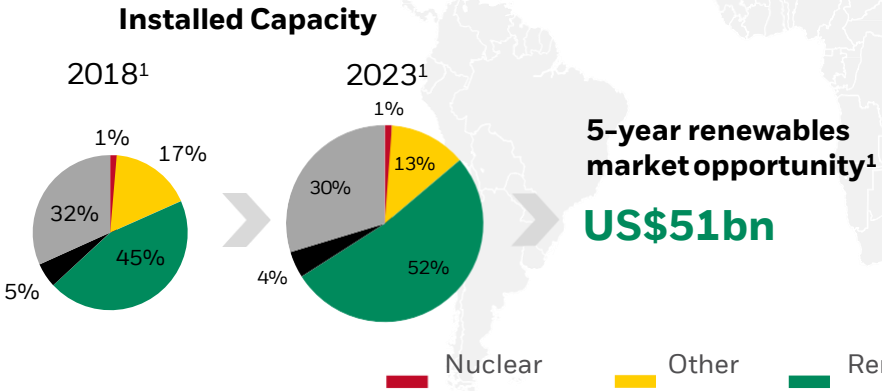
North America: substantial renewables opportunity, largest market for corporate PPAs



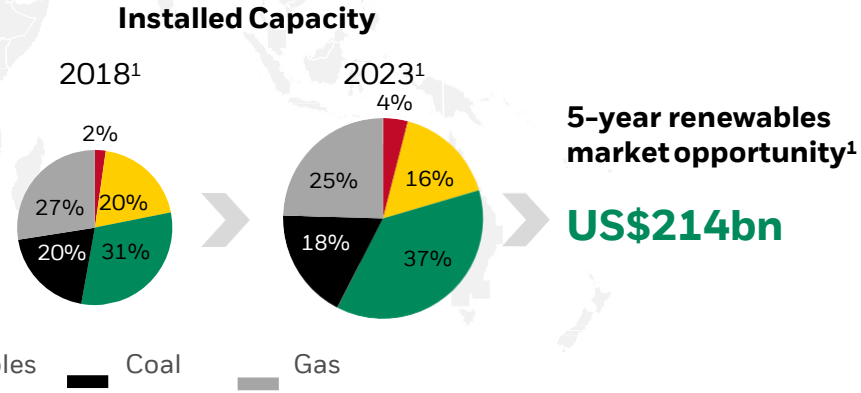
Europe: mature renewables market, rise of subsidy free projects



Latin America: growth market with strong resource and electricity demand



Asia Pacific: strong renewables build-out and attractive relative value



Nuclear Other Renewables Coal Gas

Source: BlackRock using data from Bloomberg New Energy Finance, February 2019. Installed Capacity is Cumulative. 1. For BlackRock's target renewables market only in North America, Europe, Asia Pacific and Latin America. "Other" sector includes oil, demand response, other flexible capacity. **Important Information:** Any opinions or forecasts represent an assessment of the market environment at a specific time and are not intended to be a forecast of future

Appendix

Alignment with IRIS metrics

- Our impact measurement approach is aligned with the GIIN (Global Impact Investing Network)'s IRIS (Impact Reporting and Investment Standards) metrics.[1]
- IRIS is a set of standardized metrics that can be used to measure and describe the social, environmental, and financial performance of organizations and businesses receiving impact investment capital.
- We leverage IRIS metrics aligned with the UN Sustainable Development Goals in order to align with industry standards and best-practice.

Sustainable Development Goal (SDG)[2]	IRIS Metric	Definition	IRIS identifier[3]
SDG 6	Water Conserved	Volume of reduced water usage achieved as a result of the organization's water conservation efforts during the reporting period.	OI4015
SDG 7 / SDG 13	Energy Savings from Products Sold	Amount of energy savings over the lifetime of the product for those products that were sold by the organization during the reporting period.	PI7623
SDG 8	Jobs Created at Directly Supported/Financed Enterprises	Net number of new full-time equivalent employees working for enterprises financed or supported by the organization between the beginning and end of the reporting period. Many organizations may choose the beginning of the reporting period to be the time when the organization began its support/investment.	PI3687
SDG 11	Community Engagement Strategy	Indicates whether the organization implements a strategy to manage its interactions with local communities affected by its operations.	OI2319

1: https://iris.thegiin.org/metrics, April 2019. 2: https://www.un.org/sustainabledevelopment/sustainable-development-goals/, April 2019. 3: Impact Reporting and Investment Standards metrics. Source: BlackRock. For illustrative purposes only.

Calculation

		Input	Output
SDG 6	Metric Calculation	BLK ownership of expected annual production[1] (MWh/years) x Time horizon[2] (years)	= Total MWh generated over time horizon (MWh)
		Water saved from power generation[3](meters^3/MWh) x Total MWh generated over period over time horizon (MWh)	= Total water saved over time horizon (meters^3)
	Dollarization	Cost of water[4] (USD/meters^3) x Total water saved over time horizon (meters^3)	= Dollarized water saved (USD)
	Impact Multiple	Dollarized water saved (USD) ÷ Total capital deployed (USD)	= Impact Multiple
SDG 7 & 13	Metric Calculation	BLK ownership of expected annual production[1] (MWh/years) x Time horizon[1] (years)	= Total MWh generated over time horizon (MWh)
		Baseline emissions rate by region[5] (tons CO_2/MWh) x Total MWh generated over time horizon (MWh)	= Total emissions avoided over time horizon (tons CO_2)[6]
	Dollarization	Social Cost of Carbon[7](USD/tons CO_2) x Total emissions avoided over time horizon (tons CO_2)	= Dollarized emissions avoided (USD)
	Impact Multiple	Dollarized emissions avoided (USD) ÷ Total capital deployed (USD)	= Impact Multiple
SDG 8	Metric Calculation	Total capital invested (USD) x Jobs created per dollar invested[8] (jobs/USD)	= Total jobs created
	Dollarization	Average annual salary for clean energy jobs[8] (USD/job) x Total jobs created (jobs)	= Dollarized jobs created (USD)
	Impact Multiple	Dollarized jobs created (USD) ÷ Total capital deployed (USD)	= Impact Multiple
SDG 11	Dollarization	GRP annual contribution to community benefit programs (USD/year) x Period of BLK ownership (years)[10]	= Sum of GRP contribution to community benefit programs (USD)
	Impact Multiple	Total community benefits (USD) ÷ Total capital deployed (USD)	= Impact Multiple

Source: BlackRock. For illustrative purposes only.

References

1. Expected annual energy production for each asset is weighted by BlackRock's % equity ownership in order to ensure impact is measured according to level of ownership.
2. Operating projects assume impact created over the period of BlackRock ownership (using 8 year average holding period). New construction projects assume impact created over full lifetime of asset.
3. Calculated as difference in water consumption for renewables vs. existing power sources by country or region. Data on electricity generation mixed sourced from IEA World Energy Outlook 2017: https://www.iea.org/weo2017/, accessed April 2019. Data on water consumption by electricity generation type sourced from IEA WEO 2016 Special Report "Water Energy Nexus". https://www.iea.org/publications/freepublications/publication/WorldEnergyOutlook2016ExcerptWaterEnergyNexus.pdf, accessed April 2019.
4. Local water tariff data sourced from Global Water Intelligence (GWI): https://www.globalwaterintel.com/global-water-tariff-survey, accessed April 2019. Water tariff represents an average of different water bills for a range of cities within each country. Where city-level data was available, this was used. In cases where city-level data was not available, state averages were used.
5. International Financial Institution (IFI) Framework for a Harmonized Approach to Greenhouse Gas Accounting http://www.worldbank.org/content/dam/Worldbank/document/IFI_Framework_for_Harmonized_Approach%20to_Greenhouse_Gas_Accounting.pdf, accessed April 2019.
6. New Construction projects include emissions resulting from construction. Net emissions avoided = emissions avoided from renewable power generation – emissions created during construction. Construction Emissions sourced from AFD Carbon Footprint Tool https://www.afd.fr/en/afd-carbon-footprint-tool-projects-users-guide-and-methodology, accessed April 2019.
7. Assuming Social Cost of Carbon based on estimates from US Interagency Working Group on Social Cost of Greenhouse Gases, United States Government. Assuming 3% discount rate, adjusting 2007 dollars for inflation to obtain 2019 dollars. https://19january2017snapshot.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf, accessed April 2019.
8. Political Economy Research Institute, University of Massachusetts Amherst, Green Growth, A U.S. Program for Controlling Climate Change and Expanding Job Opportunities, September 2014, p. 211: http://www.peri.umass.edu/fileadmin/pdf/Green_Growth_2014/GreenGrowthReport-PERI-Sept2014.pdf, accessed April 2019. Estimates only includes direct jobs created from wind and solar, compared to direct jobs created from investment in country's existing energy mix.
9. Average hourly wage (sourced from report above, p. 228) is multiplied by 40 hours/wk, 50 weeks a year.
10. Operating projects account for community benefits paid period of ownership (using 8 year average holding period). New construction projects account for community benefits paid over full lifetime of asset.

Risks

Capital at risk. The value of investments and the income from them can fall as well as rise and are not guaranteed. The investor may not get back the amount originally invested.
Past performance is not a reliable indicator of current or future results and should not be the sole factor of consideration when selecting a product or strategy.
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