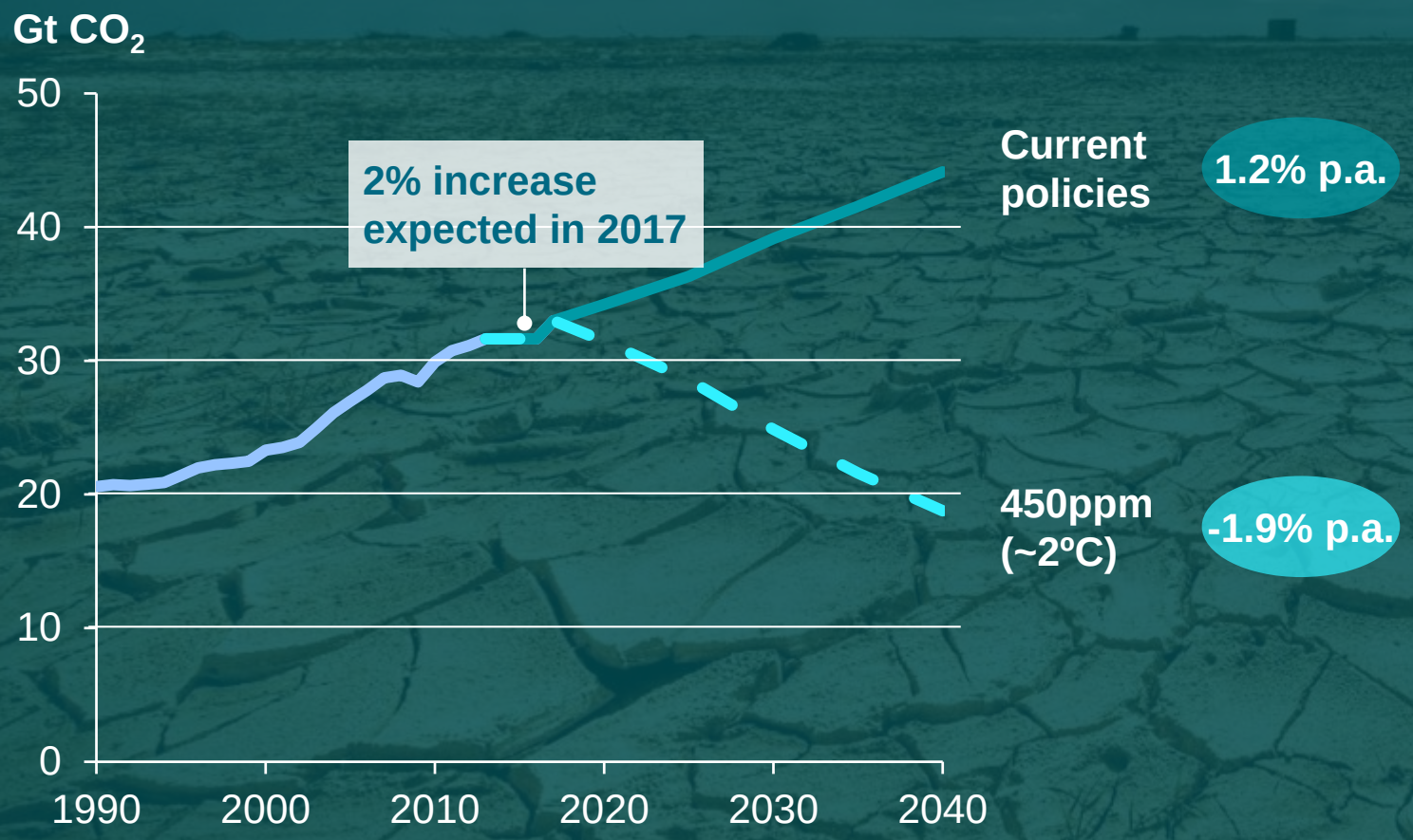
McKinsey&Company

Global trends in GHG reduction

Presentation | December 12, 2018

機密・専有情報
マッキンゼー・アンド・カンパニーによる個別の明示的な承諾を得ることなく、
この資料を使用することを固く禁じます。

Without new policies, the world is tracking for more than 2ºC warming



1 Intended Nationally Determined Contributions to CO2 emission reductions for COP21. Average growth rate 2013-2030

SOURCE: IEA (2014), CO2 Emissions from Fuel Combustion; IEA (2015) World Energy Outlook; IEA (2015) World Energy Outlook Special Report on Energy and Climate Change

The recent IPCC report highlights significant near term consequences if temperatures rise above 1.5ºC

Human activities have caused approximately 1.0°C of global warming above pre-industrial levels; temperatures are increasing 0.2°C per decade; so global temperatures likely to reach 1.5°C before 2040

At 1.5°C of average warming, the globe faces significant environmental impacts: increases in temperature extremes (greater on land and in inhabited regions), heavy precipitation in some regions and drought in others.

The impacts over the next two decades could be large: 4-8% species loss; significant increase in pests and wildfires; 70-90% coral reefs destruction; serious damage to fish stocks; falling crop/livestock yields (especially in Southern hemisphere)

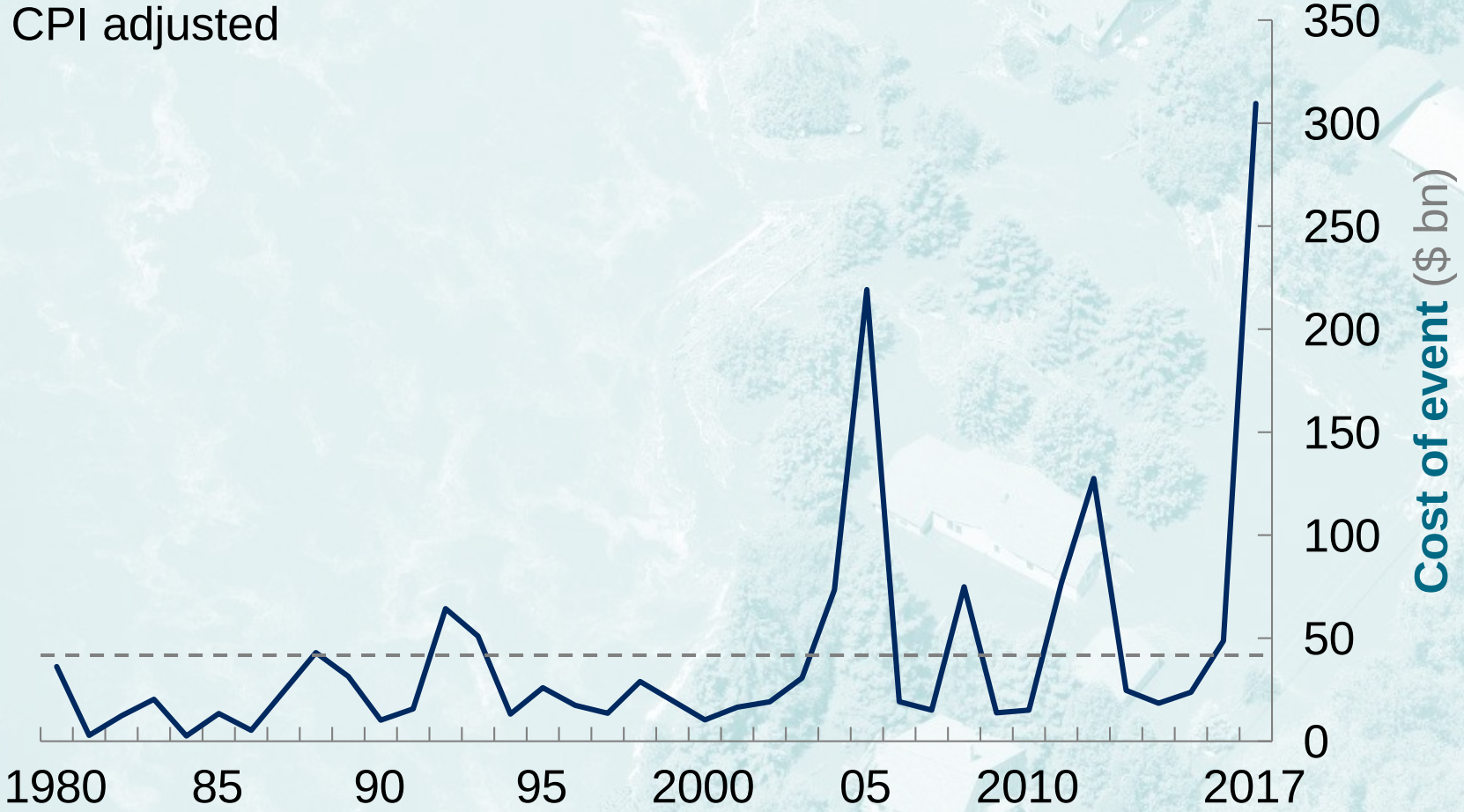
To meet 1.5°C, greenhouse gas emissions would need to decline by ~45% from 2010 levels by 2030 (even as total energy demand increases by 17%). Through 2030, this could mean[1]: flat oil demand; ~50% electricity from renewables, 75% drop in coal; 33% more natural gas; and a major commitment to CCUS[2]. **Emissions would need to reach net zero before 2060.**

1 Scenario P3 as described in Summary for Policy Makers.
2 Carbon Capture, Use, and Storage. This scenario would require a significant portion of CCUS to be “BECCS”, or Bioenergy with Carbon Capture and Storage.

SOURCE: IPCC SR15 report

Climate change and extreme weather boost supply chain risks

Cost of natural disasters exceeding $1bn in US,
CPI adjusted



Impact of disasters – take Thailand floods 2011 as example:

- **$45bn** total economic loss – only **$10bn** insured
- **9,859** factories forced to close – output fell **35.8%**
- International Airport closed for **6 months**

SOURCE: NOOA

The time for Sustainability is now

Alarm Bells Begin To Ring On The Financial Risks Of Climate Change

Climate change has the potential to wipe out trillions of pounds worth of assets, and the alarm bells are beginning to ring in the financial world

HuffPost UK-Apr 18, 2018

Coal is being squeezed out of power by cheap renewables

"Coal emerges as the biggest loser in the long run," said Elena Giannakopoulou, head of energy economics at BNEF

The Business Times, Jun 21, 2018

Saudis, SoftBank Plan World's Largest Solar Project

Saudi Arabia and SoftBank Group Corp. signed a memorandum of understanding to build a $200 billion solar power development that's exponentially larger than any other project

Bloomberg, Mar 28, 2018

Ireland to become first country to divest from fossil fuels

Government bill will require Strategic Investment Fund to sell €300m of holdings

Financial Times - Jul 12, 2018

"It's no longer ideological, but economic – both income statement and balance sheet"

Paris Agreement was an important milestone

PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

China is taking the lead on climate action and solutions to combat climate change

3 of top 10 global wind-turbine suppliers are **...**

5 of top 10 global EVs manufacturers are ...

7 of top 10 global makers of solar panels are **...**

... Chinese

“ China Aims to Spend at Least $360 Billion on Renewable Energy by 2020

– New York Times, Jan 5, 2017

Trump’s budget expected to massively slash research on renewable energy — and ‘clean coal’

(...) carving about $ 1.45 billion from its $2.09 billion 2017 budget.

– Washington Post, May 18, 2017 ”

SOURCE: Forbes; Energy Digital; Energy Sage; Wind power Monthly

India is also committed: Modi increases its massive 2022 renewable energy target By 28%

"Several years ago, India set what seemed like a lofty target of 175 gigawatts of wind and solar energy by March 2022. Few believed that was a practical target, but then India plowed forward and happily impressed the world. This week that goal was increased to 227 gigawatts!"

SOURCE: Press search

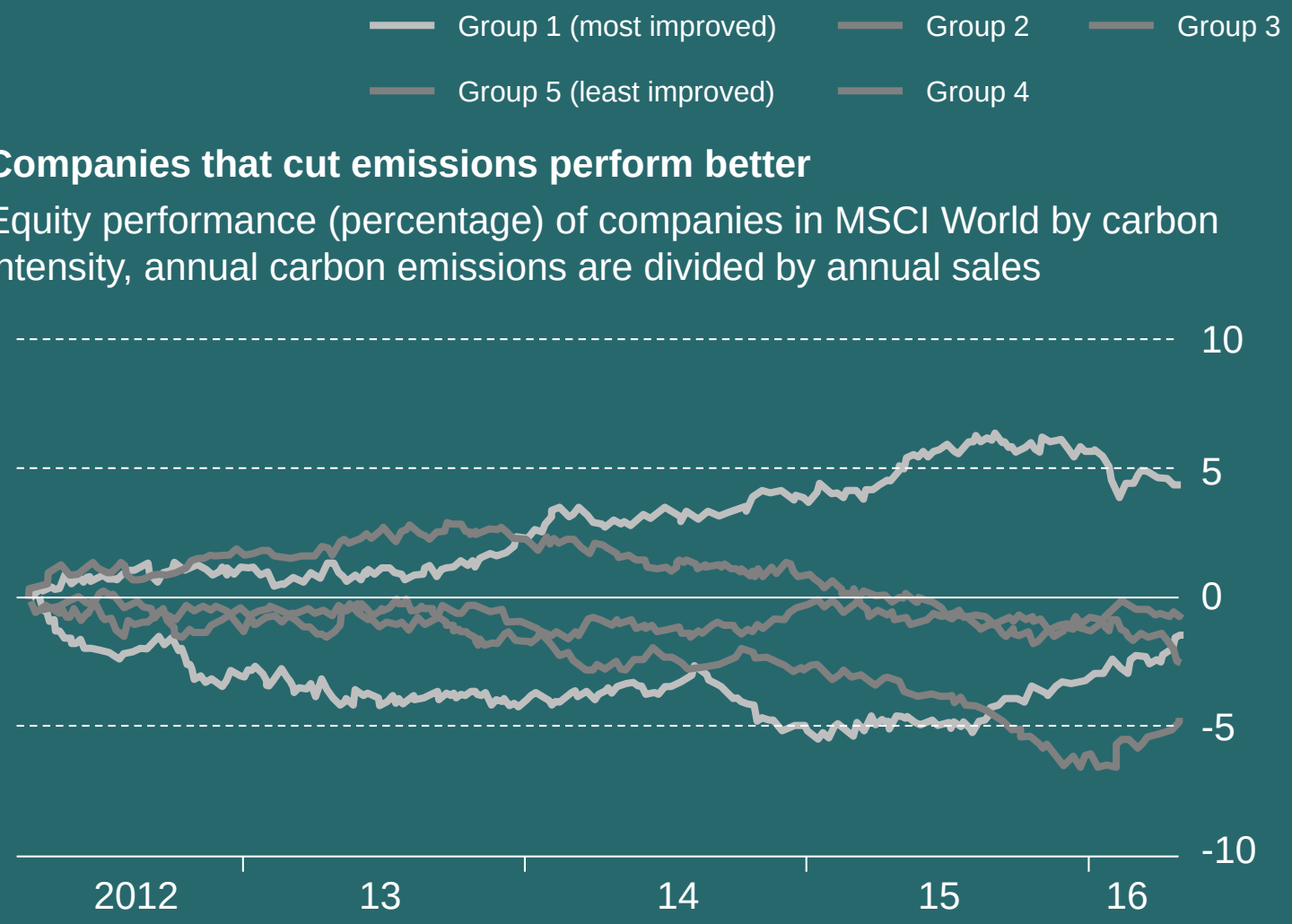
2,500 leaders commit to upholding Paris Agreement, despite plans of US withdrawal

WE ARE STILL IN

2,500 leaders from America's cities, states, corporate and academic institutions, representing $6.2 trillion of the U.S. economy commit to taking action on climate and uphold the Paris Agreement

SOURCE: Photo from https://www.gov.ca.gov/2017/11/11/news20062/

Investors are integrating ESG factors into investment decisions – because it pays



Companies that cut emissions perform better

Equity performance (percentage) of companies in MSCI World by carbon intensity, annual carbon emissions are divided by annual sales

SOURCE: FT.com - "The ethical investment boom" - Sep 3, 2017; Blackrock

We are increasingly integrating these issues [environmental, social, and governance matters] **into our investment process**

Larry Fink, Blackrock CEO - 2018 letter to CEOs

The costs of climate change will be up to 2% of GDP if we do not act today and limit the temperature increase

EXAMPLE FROM ENERGY SECTOR

If we act now, the benefits are tremendous…

$10 trillion

Annual benefits created from Energy Transition to low-carbon, with investmens of only $1.8 trillion

6 million jobs

Created following Energy Transition, compensating for loss of jobs in other industries

…however, large costs incur if we are late

2% global GDP

Annual income loss if global warming exceeds 2.5 ˚C

> Critically, the economic case for the energy transition has never been stronger …We are in a good position to transform the global energy system but success will depend on urgent action, as delays will raise the costs of decarbonization
>
> Adnan Z. Amin, IRENA Director-General

SOURCE: IPCC; IEA; IRENA; Financial Times