

## Summary: *RISKY BUSINESS: The Economic Risks of Climate Change in the United States*

### Take-home messages:

1. If world-wide carbon emissions continue to grow at their present rate, the economic consequences in the US will be huge. Some of the clearest and most economically significant of these risks are:
  - damage to coastal property and infrastructure from rising sea levels and increased storm surge,
  - climate-driven changes in agricultural production and energy demand, and
  - the impact of higher temperatures on labor productivity and public health.
2. However, if we act aggressively, both by adapting to climate change and reducing carbon emissions, we can significantly reduce our exposure to the worst economic risks from climate change.
3. Risky Business report "calls on the American business community to rise to the challenge and lead the way in helping reduce climate risks."

### Background

Produced June 2014 by Risky Business Project (co-chairs Michael Bloomberg, Henry Paulson, and Thomas Steyer)

Research for project conducted by team convened by Rhodium, an economic research firm specializing in analyzing disruptive global trends.

Research team was co-led by Dr. Robert Kopp (Rutgers University) and economist Dr. Solomon Hsiang (UC, Berkeley) and included Risk Management Solutions (RMS), the world's largest catastrophe-modeling company for insurance, reinsurance, and investment-management companies.

The team took a standard risk-assessment approach "leveraging recent advances in climate modeling, econometric research, private sector risk assessment, and scalable cloud computing to provide decision-makers with empirically-grounded and spatially-explicit information about climate risks."

More complete information available at Rhodium ([climateprospectus.rhg.com](http://climateprospectus.rhg.com)) and Risky Business Project ([riskybusiness.org](http://riskybusiness.org)) websites.

### Some highlights

*Short-term climate threats (next 5-25 years) assuming current path of CO2 emissions:*

- as a result of rising sea-level and increased frequency of hurricanes, **annual cost of storms will increase up to \$7.3B per year** along Eastern Seaboard/Gulf of Mexico
- **decline in agricultural yields of 10%** in Midwestern and Southern region without adaptation (e.g., changing to other crops)
- increased temperatures will require **95 gigawatts of new power generation capacity with rate increases of up to \$12B per year** (about equal to 200 coal or natural gas-fired power plants)

*Longer-term climate threats (years 2050-2100) assuming current path of CO2 emissions:*

- by 2050 coastal **property worth \$66-106B will be below sea level**; by 2100 increases to **\$238-507B**
- by 2100, there is predicted annual **increase of \$19-33B/yr from hurricanes/ coastal storms**
- large increases in extreme heat events: **number of days >95°F increases 2x-3x by 2050, 4x-6x by 2100**
- more extreme heat events could lead to **3% decline in labor productivity** for outdoor workers
- **decline in annual crop yields of 50-70% in Southeast, lower Great Plains, and Midwest** with current crops; however yields in northern states may increase
- **impacts will be very different regionally:** greatest impacts of sea level rise and hurricanes in southeast; agriculture in south and midwest; forest fires in west