ICF INTERNATIONAL

Opportunities and Challenges for RESNET in the Voluntary Carbon Market

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Origins of ICF's perspectives

Highlights

- ICF International has more than 18 years expertise advising governments and companies on climate change and sustainability
- Market-leading expertise in energy and climate change; supported valuation of more than 100 GW in past 3 years
- Provided climate policy advice to > 60 governments
- Providing sustainability strategy advice to > 60 companies in the FT Global 500
- Over 300 professionals with sustainability-related expertise out of total staff of 3,000

Corporate overview

- Founded in 1969, ICF International partners with government and commercial clients to deliver consulting services and technology solutions in energy, environment, security, social programmes, and transport
- Combining passion for our work with industry expertise and innovative analytics, we deliver compelling results throughout the entire programme life cycle, from analysis and design through implementation and improvement

Sustainability service offerings

- Developing sustainability strategies aligned with key corporate drivers
- Helping companies assess their operations, products, and reputation value-at-stake under carbon constraints
- Providing risk management services to help prepare companies to participate in emissions trading market
- Designing projects to reduce environmental footprint
- Undertaking due diligence of carbon credit projects
- Advising low-carbon technology companies on business plans and market positioning

Selected Worldwide Climate Experience

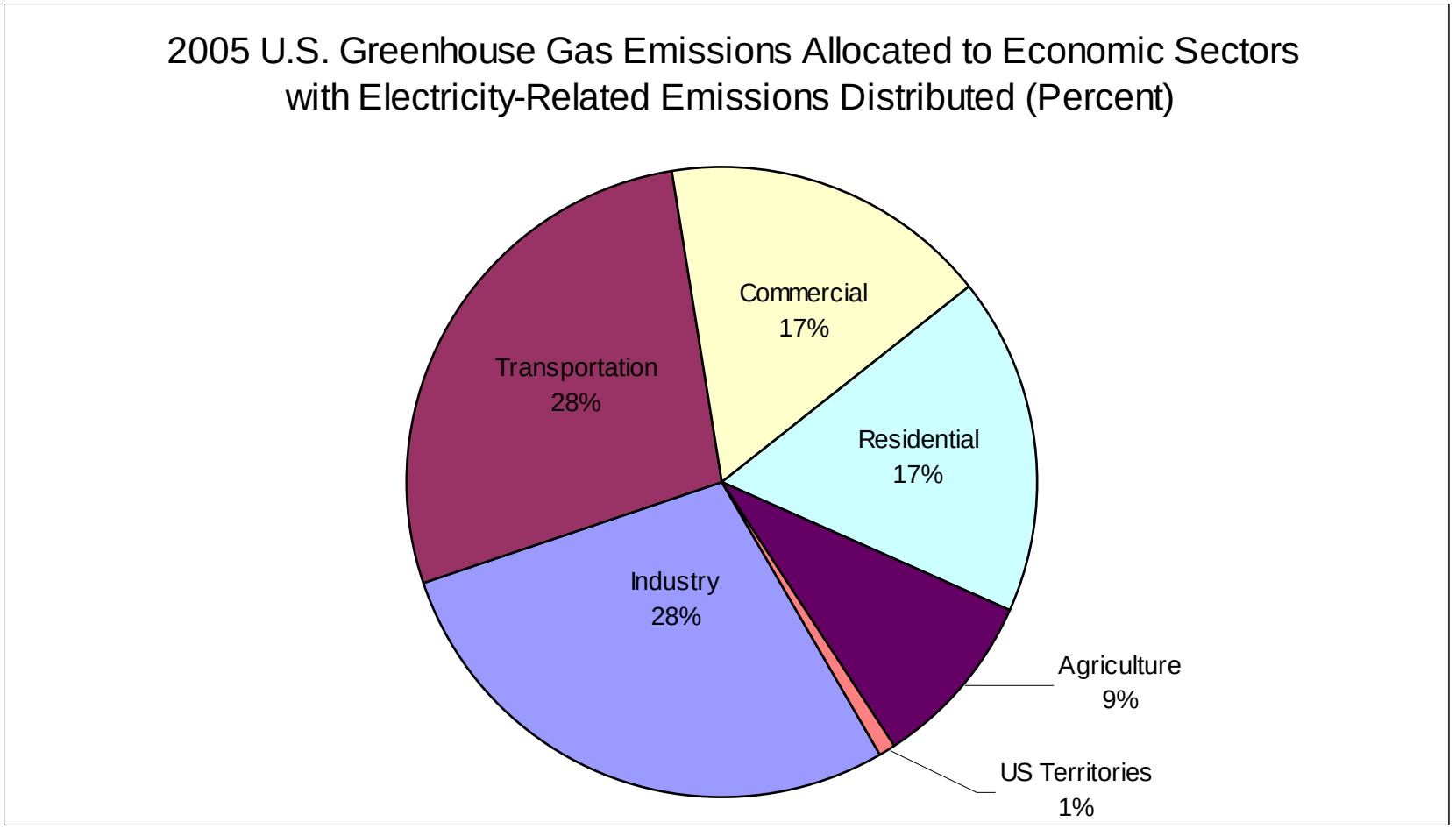
Award-winning Climate Change Services

We have more experience in the field of carbon management than any other professional services firm.

- Our investments in analytical resources and human capital positioned us to be voted the "best advisor" for the past two years on the EU ETS and North American markets by more than 900 different organizations that responded to a survey by *Environmental Finance* magazine.

The Context

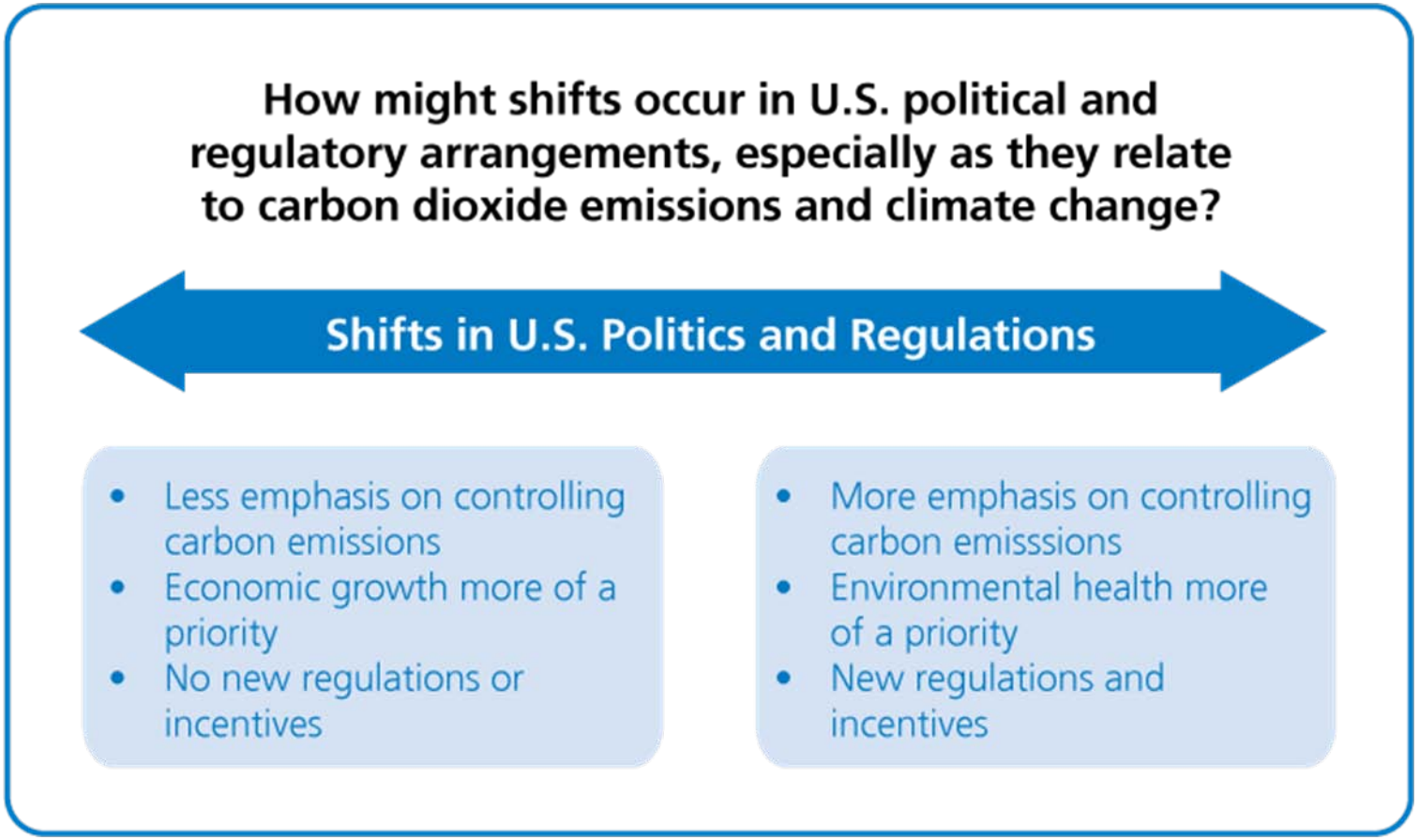
Sources of U.S. Carbon Emissions



Source: **US EPA, US GHG Inventory**

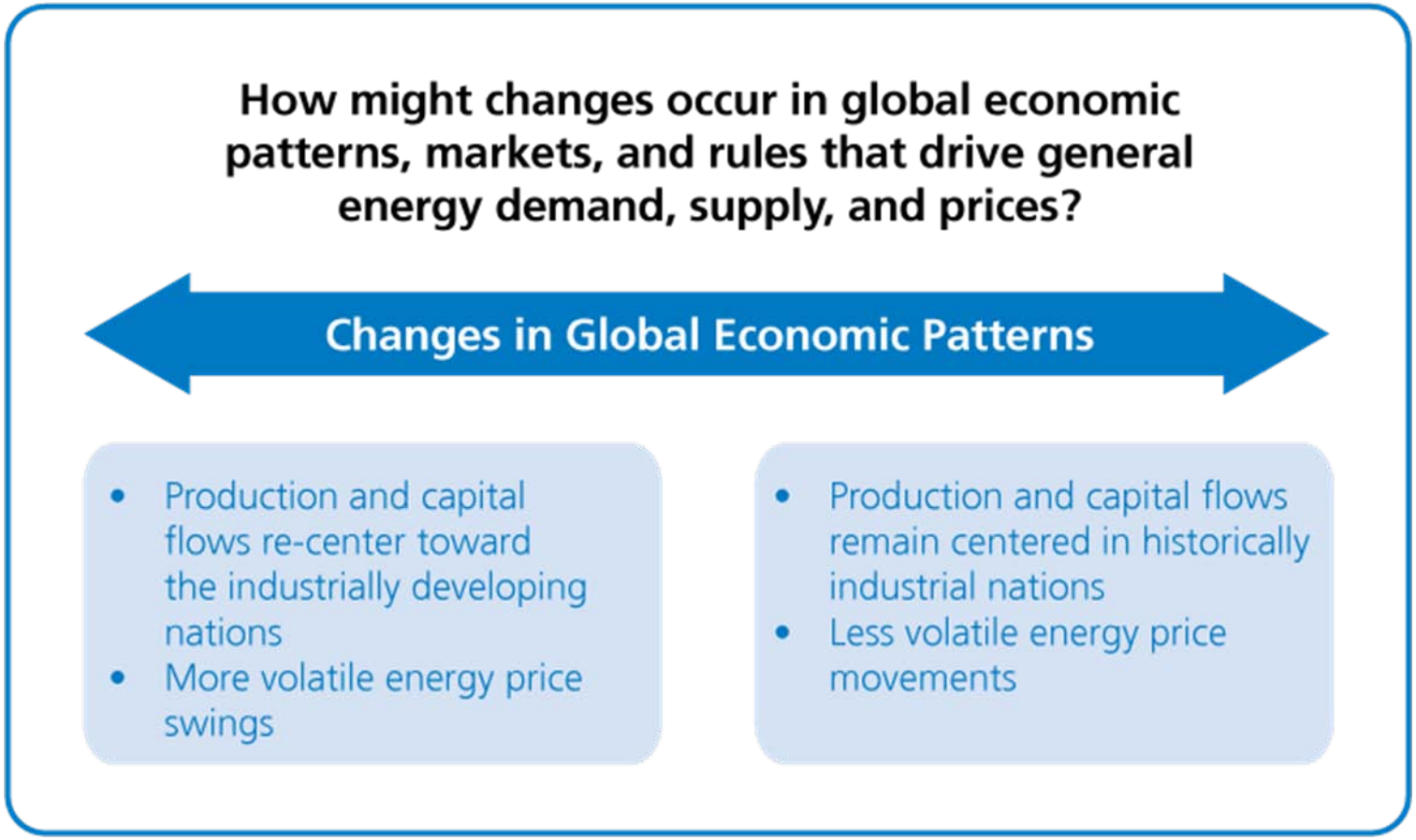
The Policy and Regulatory Environment

Policy and Regulatory Environment



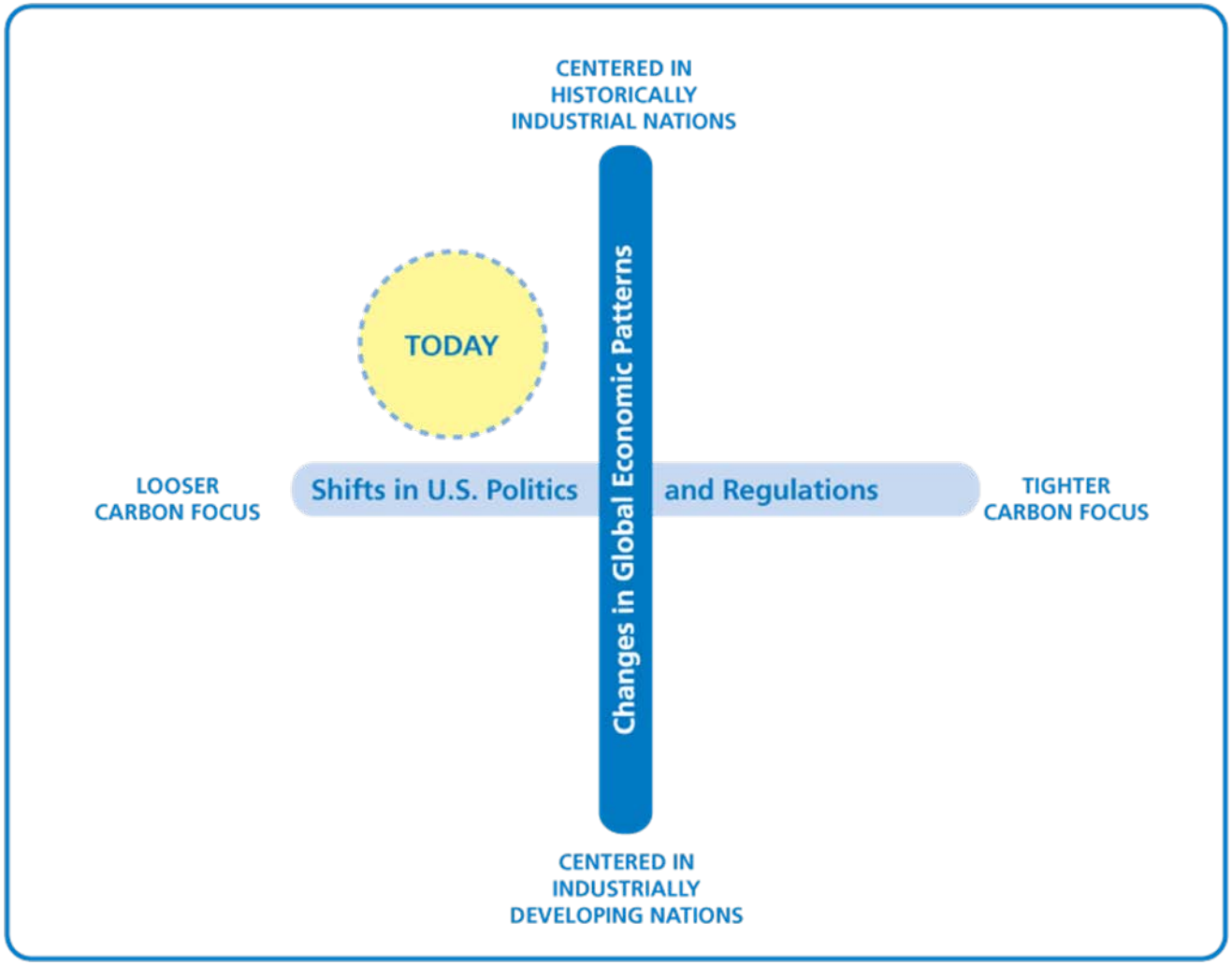
Source: **Energy Star and GBN**

Global Economic Environments



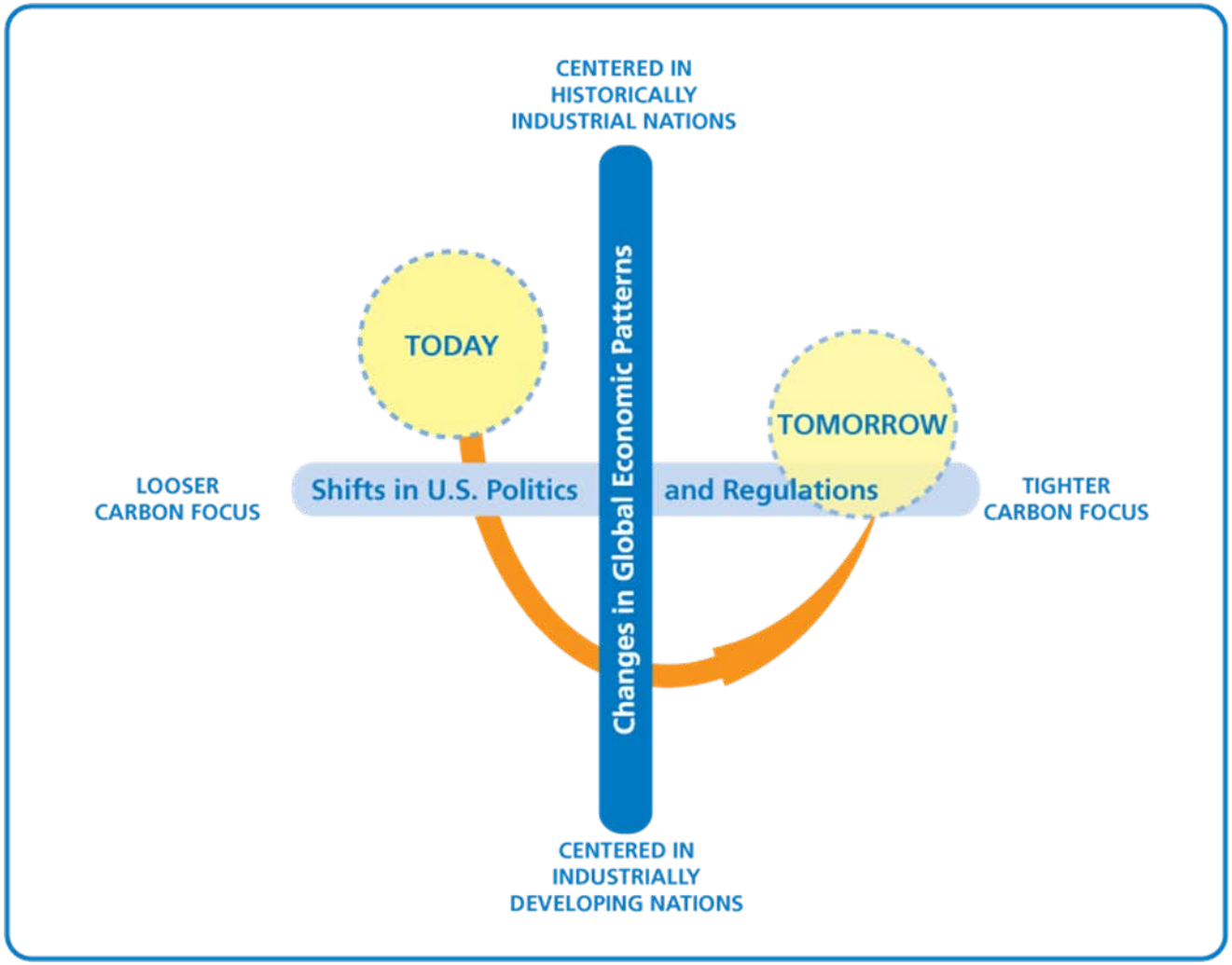
Source: **Energy Star and GBN**

Today



Source: **Energy Star and GBN**

Future



Source: **Energy Star and GBN**

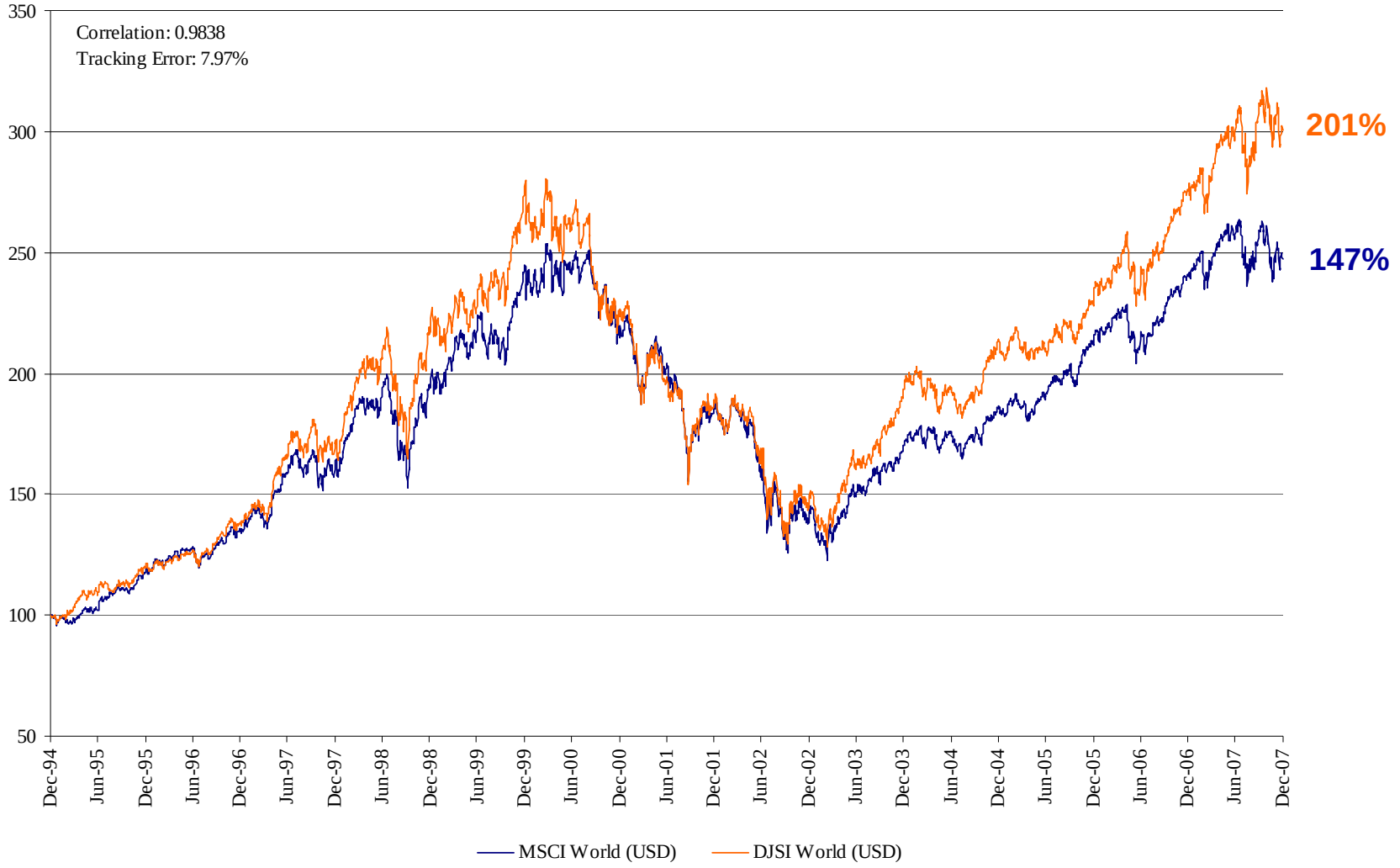
The Response

Why Do Companies Care?

- Future Regulation
- Operational Savings and Efficiencies
- Employee Recruitment and Retention
- Positive PR
- **Shareholder Value**

Why Shareholders Care

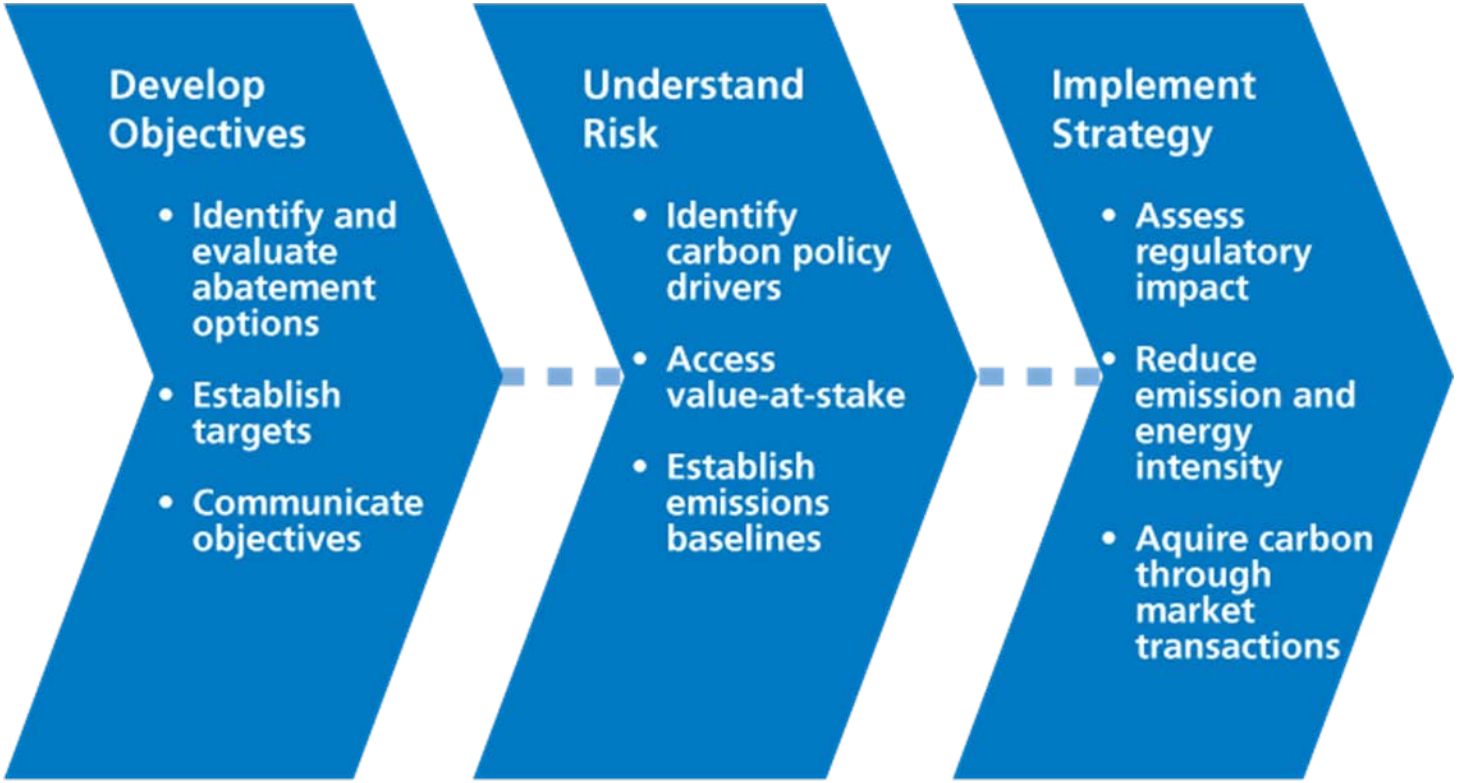
DJSI vs. MSCI December 1994–December 2007



What Do Companies Do?

- Measure their carbon footprint
- Manage energy efficiency actively in their company
- Consider green energy purchases
- Make energy management a board-level priority
- Encourage industry-wide action
- Pursue carbon neutrality and carbon offset purchase

Carbon Strategy Pathway



What Is Carbon Neutrality?

- A company or event agrees to take actions to reduce its overall carbon emissions, in the aggregate, to zero.
- It does not mean that the company or event emits no greenhouse gases.
- Best represented by a combination of internal actions to reduce emissions combined with external actions to offset the portion of internal emissions that cannot be eliminated.

Steps to Carbon Neutrality

1. Measure carbon footprint
   - GHG Inventory
2. Reduce carbon footprint
   - Operational actions the company carries out to permanently reduce carbon emissions
3. Offset carbon footprint
   - "Filling the gap" with offsets
4. Reassessing and sustaining carbon neutrality each year

Company Carbon-Neutral Commitments

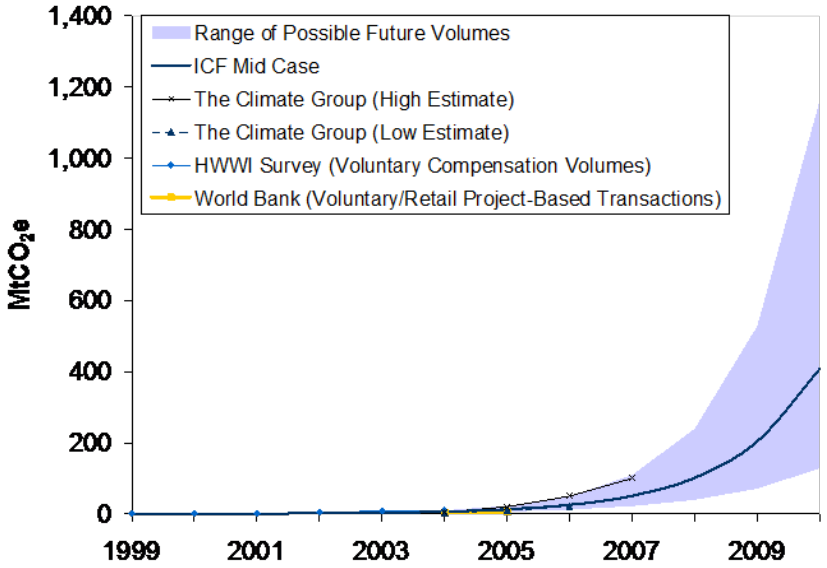
- 2005—HSBC
- 2006—Barclays UK, British Sky Broadcasting, World Bank, Avis Europe, Simmons & Simmons (legal)
- 2007—Yahoo!, Google, Salesforce.com, Mosaic, Green Mountain Power, Yakima, US Green Building Council
- 2008—ICF International, Fiji Water, KPMG Australia
- 2010—NewsCorp, Timberland, ST Microelectronics, Vancity (bank)
- 2012—Nike, Marks & Spencer
- RESNET—Carbon Neutral Conference Through CarbonFund.org White Tags

Source: **http://www.bsr.org/reports/BSR_Carbon-Neutral-Chart.pdf**

Voluntary offsets market

- Significant opportunity for sellers and buyers
- Explosive but fragmented growth
  - Roughly **10-25 MtCO2e** offset in 2005, likely double in 2006
  - High uncertainty regarding future volumes, but our extrapolations of current growth rates suggest a market of **125-1,200 MtCO2e**, with a mid case projection of **400 MtCO2e** by 2010

Market Volumes



Sources: HWWI, World Bank, The Climate Group, ICF Calculations

- Standards and verification lend credibility, fungibility, and consistency
  - **Voluntary Carbon Standard (VCS):** (IETA and The Climate Group)
  - **Gold Standard (GS):** (WWF, Helio International, SSN)

Source: ICF International (December 2006):

Voluntary Carbon Offset Market: Outlook 2007

Offsetting a Company's Carbon Footprint

- What are the important criteria for a company to consider in a carbon offset?
  - **Additionality—would the environmental benefits occur anyway**
  - Permanence—do reductions last forever
  - Leakage—do emissions increase elsewhere in response
  - Co-benefits
  - Verification
  - **Price**
  - Vintage
  - **Location—Are the offsets close to a company's operations?**
  - **The Story—Is the message consistent with the company's brand?**

Types of Projects for Offsets

- Afforestation/Reforestation
- Agriculture
- Renewable Energy
- Industrial Process Emissions
- Fuel Switching
- Energy Efficiency
- Landfill Gas
- Mining Methane
- Carbon Capture and Sequestration
- Transport

Examples of Sample Projects

- Cambodia Low-Charcoal Cookstoves
- Brazil Ceramics Plant Fuel Switch
- Conservation International Forestry Project
- Brazil Agricultural Methane
- Mexico Landfill Gas Capture
- Amazon Run-of-the-River Hydro
- India Wind
- Illinois Coalmine Methane Capture
- Native American Biomass Pellet

Beware of Bad Press

- "**Value of U.S. House's Carbon Offsets Is Murky**". Washington Post, January 28, 2008
- **"Another Inconvenient Truth: Behind the Feel-Good Hype of Carbon Offsets, Some of the Deals Don't Deliver".** Business Week, March 26, 2007
- **"Industry caught in carbon 'smokescreen'".** Financial Times. April 25, 2007

Next Generation of Offsets—Think Global, Offset Local?

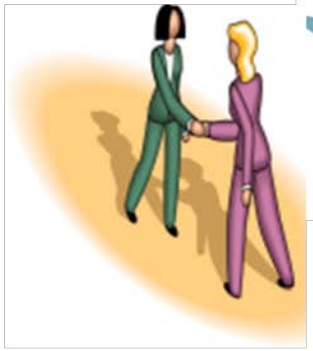
- **"Right now, my offsets, I don't know where the hell they go. They might be going to the Amazon,"** San Francisco Mayor Gavin Newsom, a Democrat, told Reuters. "There are some scam artists doing nothing other than banking on this goodwill."
- "The City will soon begin collecting voluntary offsets payment from its residents for investment in local offset projects. **These projects will invest this money into local programs that reduce greenhouse gas emissions."** Mayor Tom Bates, City of Berkeley

Residential Energy Efficiency Emissions Trading Initiative Pilot

- What is ETI?
  - ***Pioneering voluntary activity*** **by Fannie Mae in early 2000s to measure and verify emissions reductions from residential energy efficiency**
    - ***commitment to support environmentally sound homeownership in US***
  - ***Partnership with utilities*** **as the facilitators of the residential energy efficiencies**
  - ***Saleable emissions pool*** **of bundled greenhouse gas (GHG) and, in the future, sulfur dioxide (SO_2) and nitrous oxide (NO_x) emissions**
  - **Means to create financial value for reduction in pollution and *return the value to homeowners* by creating additional residential energy efficiency activities**

How ETI Works

Partner provides incentives for Homeowners to purchase energy efficient home or retrofit existing house



Partners join ETI and use the MVP Handbooks to estimate, measure, track and report GHG, NO_X and SO_2 tradable emissions reductions to Fannie Mae ETI

Fannie Mae bundles Partners' tradable emissions into an Emissions Pool, verifies claimed emissions reductions, and sells Pool to buyers on the GHG, NO_X AND SO_2 emissions trading markets

Partners reinvest proceeds from emission sales back into their residential energy efficiency and DSM programs. Fannie Mae monitors actual emissions over time for each transaction.

Market Challenges for Residential Offsets

- Ownership/Responsibility—Cap-and-trade likely to focus on power generators, so for EE offsets, difficult to avoid "double counting"
- Additionality—How does the buyer know that the carbon reduction wouldn't have happened anyway?
- Verification—How do you document the precise additional savings?
- Scale—Average house uses 10-11 tons/year. At $20/ton, offset revenue for a 20% reduction = $40/house.

Market Opportunities for Residential EE

- Use cap-and-trade allocation revenue to fund EE projects
- Complementary policies—codes, standards, incentives
- Look to geographies outside of cap-and-trade
- RESNET provides standards, verification necessary to create a credible market

Conclusions

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- Potential quantity for residential EE offsets is enormous
- Reality for development, marketing measurement and verification of residential EE offsets is difficult
- To penetrate the market, RESNET must:
  - Continue to create standards that make market credible
  - Determine the best way to bundle projects to achieve economies of scale
  - Leverage the desire of people and companies to have local offsets they can see and touch
  - Put a face on the project--In the voluntary market you're telling a story—tangible, real, transparent, helping the nearby community

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