



Greenport Americas 2010:

The Why and How of Carbon Neutrality for Ports

A photograph of a wind farm in a green field under a blue sky with scattered clouds. The wind turbines are white and are arranged in a line across the horizon. The foreground is a lush green field.

Mark LaCroix LEED AP, EVP
May 6, 2010 - Charleston

Our starting point

“Periodically, major new forces dramatically reshape the business world...

While many companies may still think of global warming as a corporate social responsibility issue, business leaders need to approach it in the same hard headed manner as any other strategic threat or opportunity.”

Harvard Business Review, 2008.

The CarbonNeutral Company's credentials

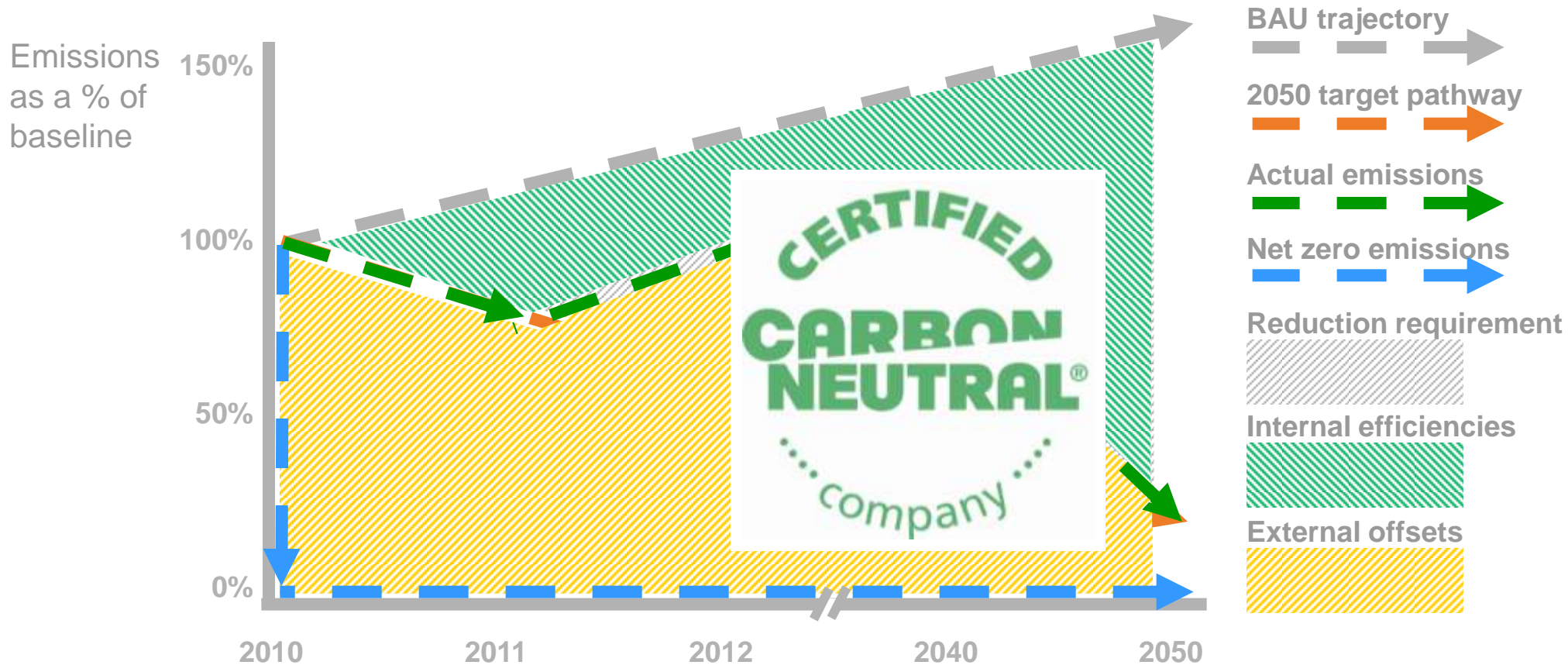
A world leading provider of carbon reduction solutions

- Leading international carbon management and carbon offset company
- 12 years experience in the industry
- International with regional HQs in New York, London and Singapore
- 300+ multi-national clients and 100s of SMEs across 32 countries
- Industry leading quality assurance program

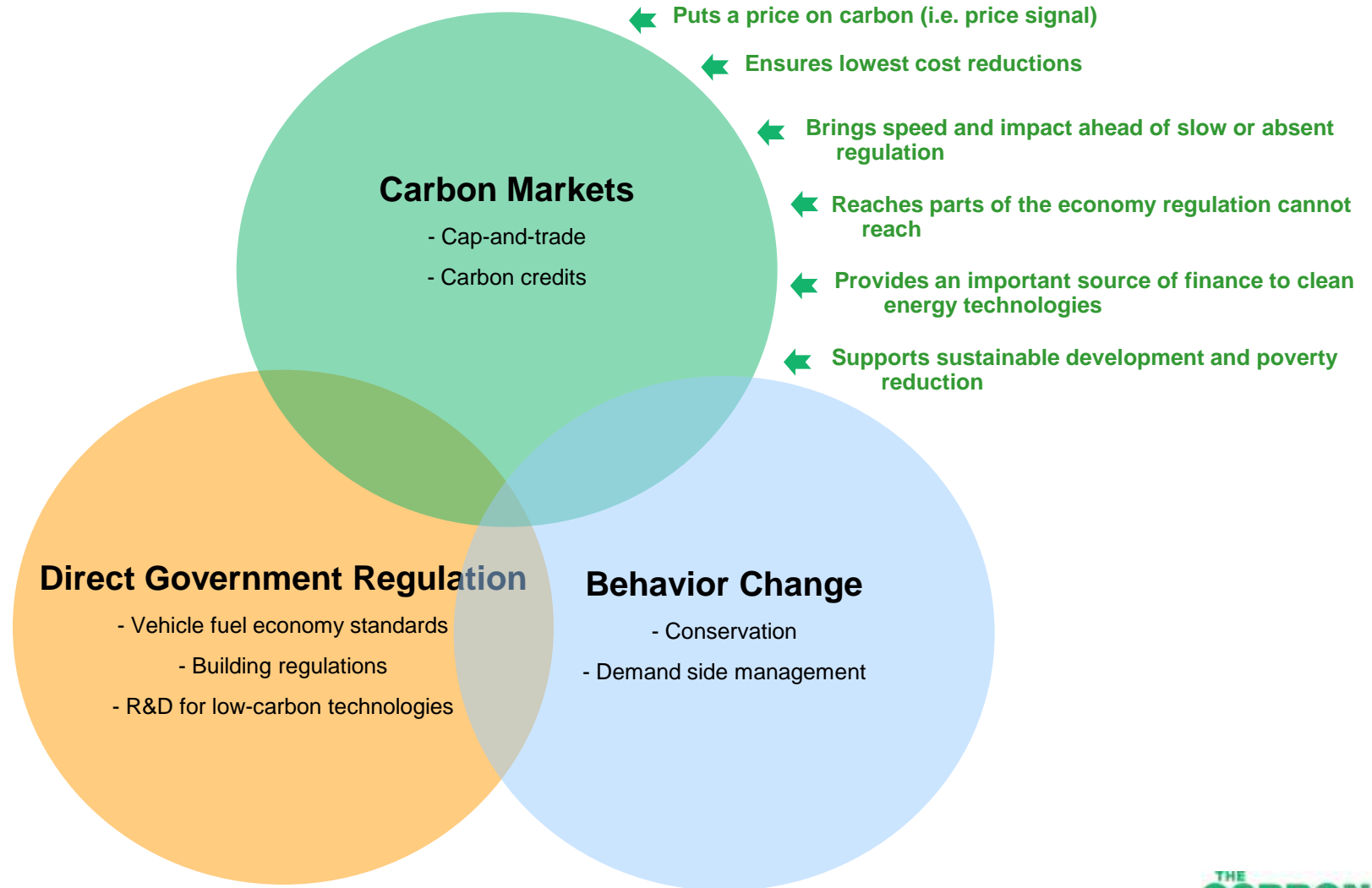
“The CarbonNeutral Company is one of the few offset providers supplying good quality advice and carbon offsets, and I applaud them for the integrity with which they have driven forward the agenda on standards.”

Sir Jonathon Porritt, Ex-Chair, UK Sustainable Development Commission

What is carbon neutrality?



The role of the carbon market in addressing climate change

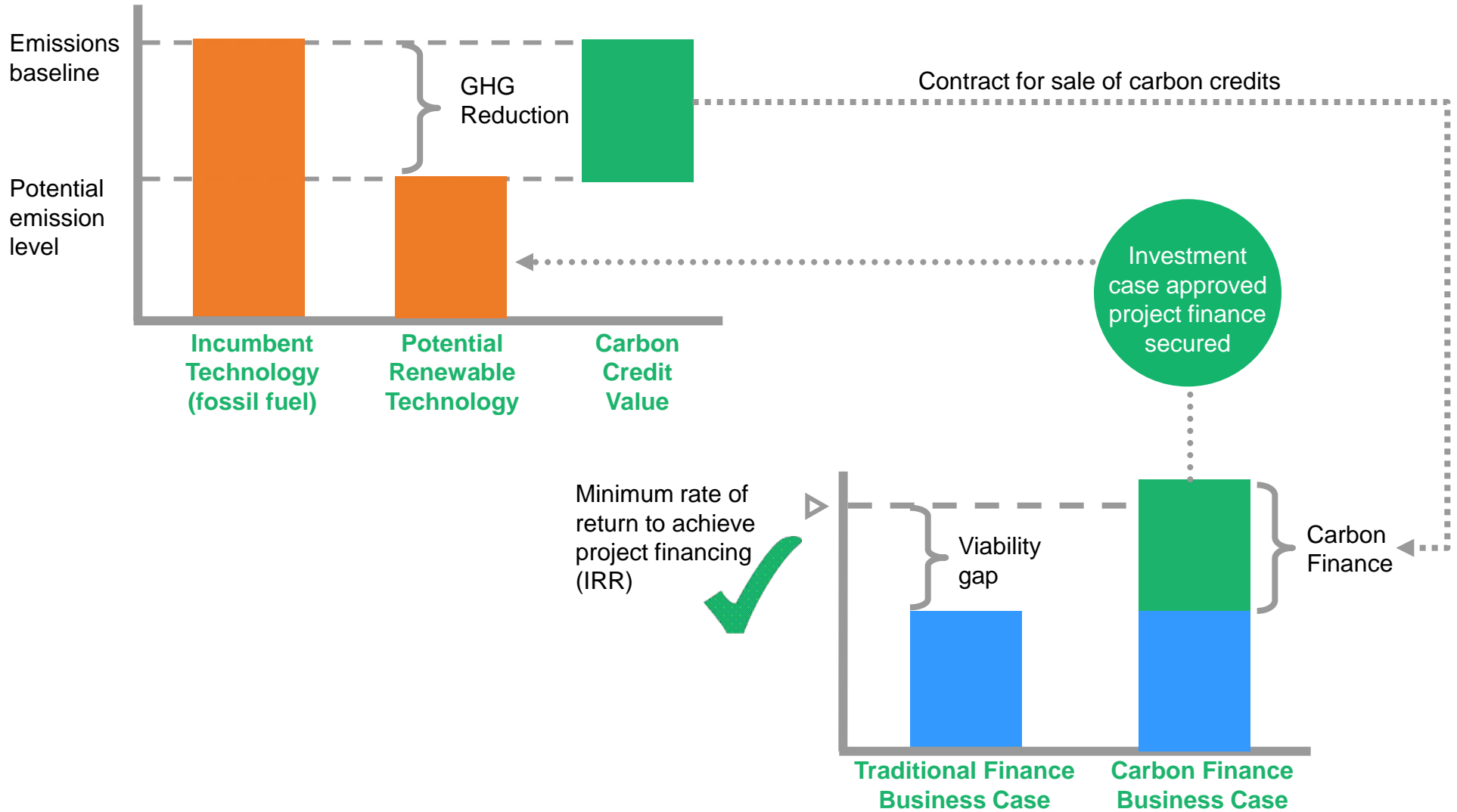


Outsourcing emission reductions is a business decision



- Businesses pay to outsource emissions reductions when it is more cost-efficient or technologically feasible than doing so in-house
- In the same way as if they were making the decision to outsource a business process like accounts payable or payroll, or when a household sends its waste to be recycled.
- Every business makes strategic decisions to make or buy, to in-source or outsource, and delivering emissions reductions is no different.

What is a carbon offset?



Essential elements of an emissions reduction project

1. REAL

All emission reductions generated them must be proven to have genuinely taken place

2. MEASURABLE

All emission reductions must be quantifiable using recognized measurement tools and techniques within standard margins of measurement error with leakage taken into consideration

3. ADDITIONAL

Emission reductions projects, but be able to prove that the project is additional, and would not have taken place without the help of carbon finance

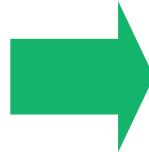
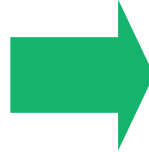
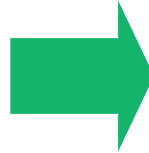
4. INDEPENDENTLY VERIFIED

In order to provide sufficient guarantees to buyers emission reductions should be verified by an approved independent third party verifier with the expertise necessary in both the country and sector in which the project is taking place to provide an adequate level of assurance

5. UNIQUE

Double counting is prevented through the use of registries, that track ownership and eventual cancelation for regulatory compliance

Carbon finance enables the transition to a low carbon economy



Where do carbon offsets come from?

Hydro Generation



Coal Mine Methane



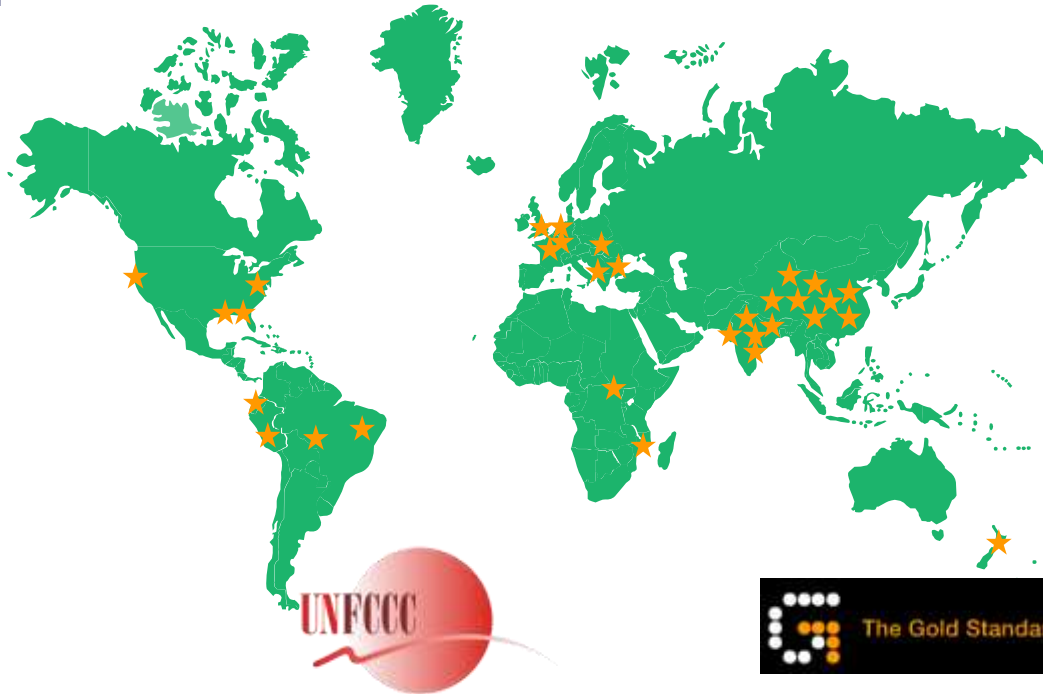
Livestock Methane



Solar Power



Forestry



Wind Power



RECs – a historical perspective

- Originally envisioned as a compliance tracking tool for a national renewable energy portfolio standard (RPS) proposed in the mid-1990s
 - The RPS was not passed but RECs were adapted for use in the voluntary market
 - Today, RECs are used in both the compliance (utilities) and voluntary markets
- Definition: A REC is a certificate that is issued when one **megawatt-hour of electricity is generated and delivered to the grid** from a qualifying renewable energy source, such as wind, solar, or biomass
 - 29 states now have RPS and there are significant differences in the definition
- Over time definition of a REC extended to include ambiguously defined “**environmental attributes**” or “**benefits**”

SO₂?

NOx?

Particulate?

Water Quality?

Land Use?

GHGs?

The two fundamental requirements that RECs don't address

Additionality

- The most important characteristic of a carbon offset is its additionality.
- Projects must provide a rigorous demonstration of additionality to prove they would not have happened under a business as usual scenario.
- Projects that fail to meet the commonly accepted tests for additionality are not eligible to sell greenhouse gas offsets.

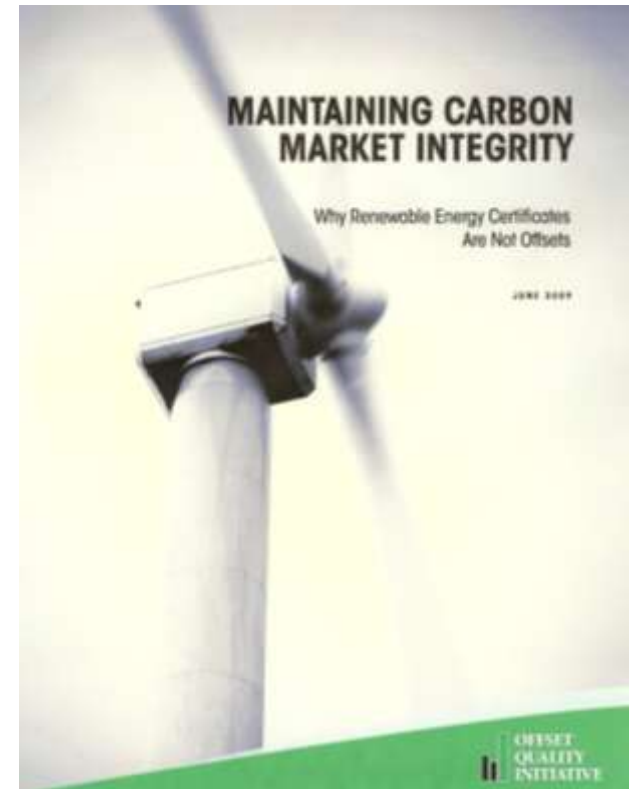
Ownership and Double Counting of emission reductions

- Clear ownership of emission reductions is fundamental to avoid double counting.
- If ownership is contested it is likely that multiple parties will make reduction claims based on the same megawatt hour of renewable electricity.
- Clear policies and reporting mechanisms are required to convey and track ownership to avoid double counting.

Recommended further reading

- OQI has emerged to provide a unified, non-partisan, credible, and impartial source of information regarding GHG offsets
- OQI believes that offsets have a vital role to play in combating global climate change and should be included in state, regional, and federal climate legislation

Report available to download at
<http://www.offsetqualityinitiative.org/briefings.html>



PEW CENTER
Global CLIMATE CHANGE



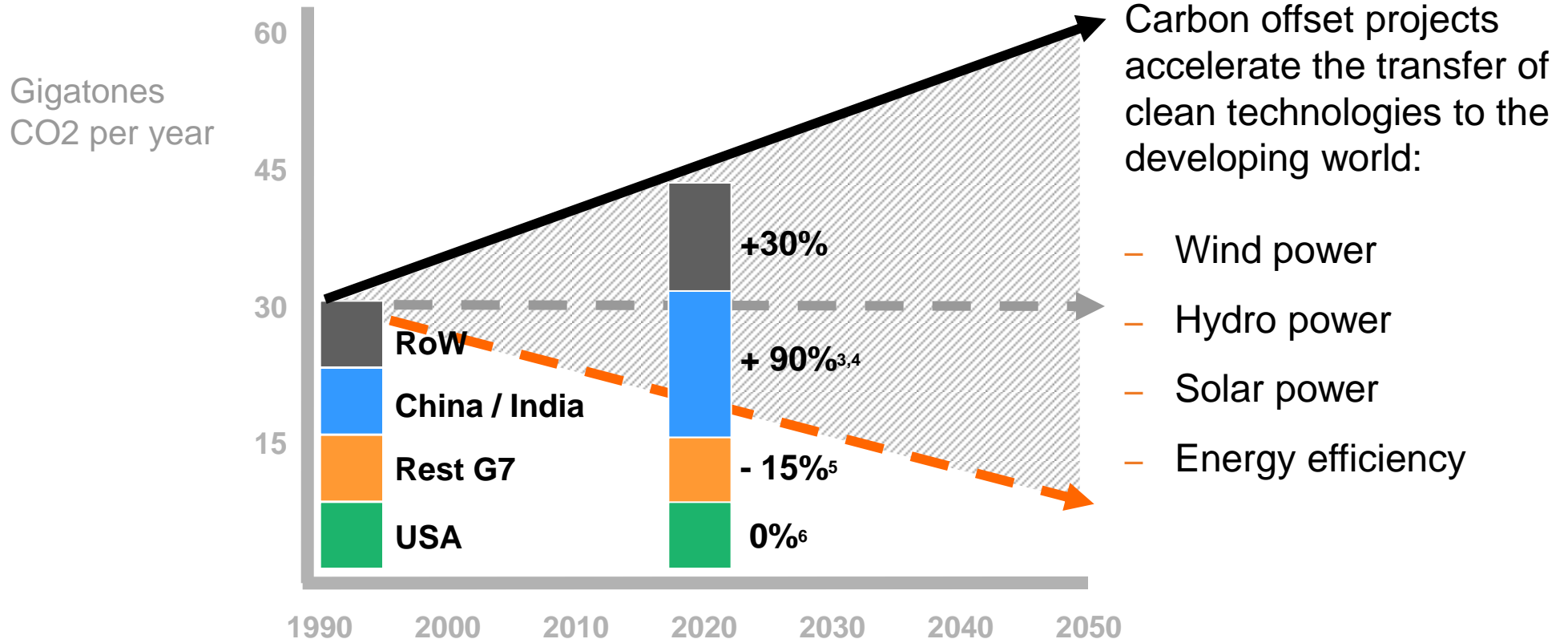
ghg management
institute



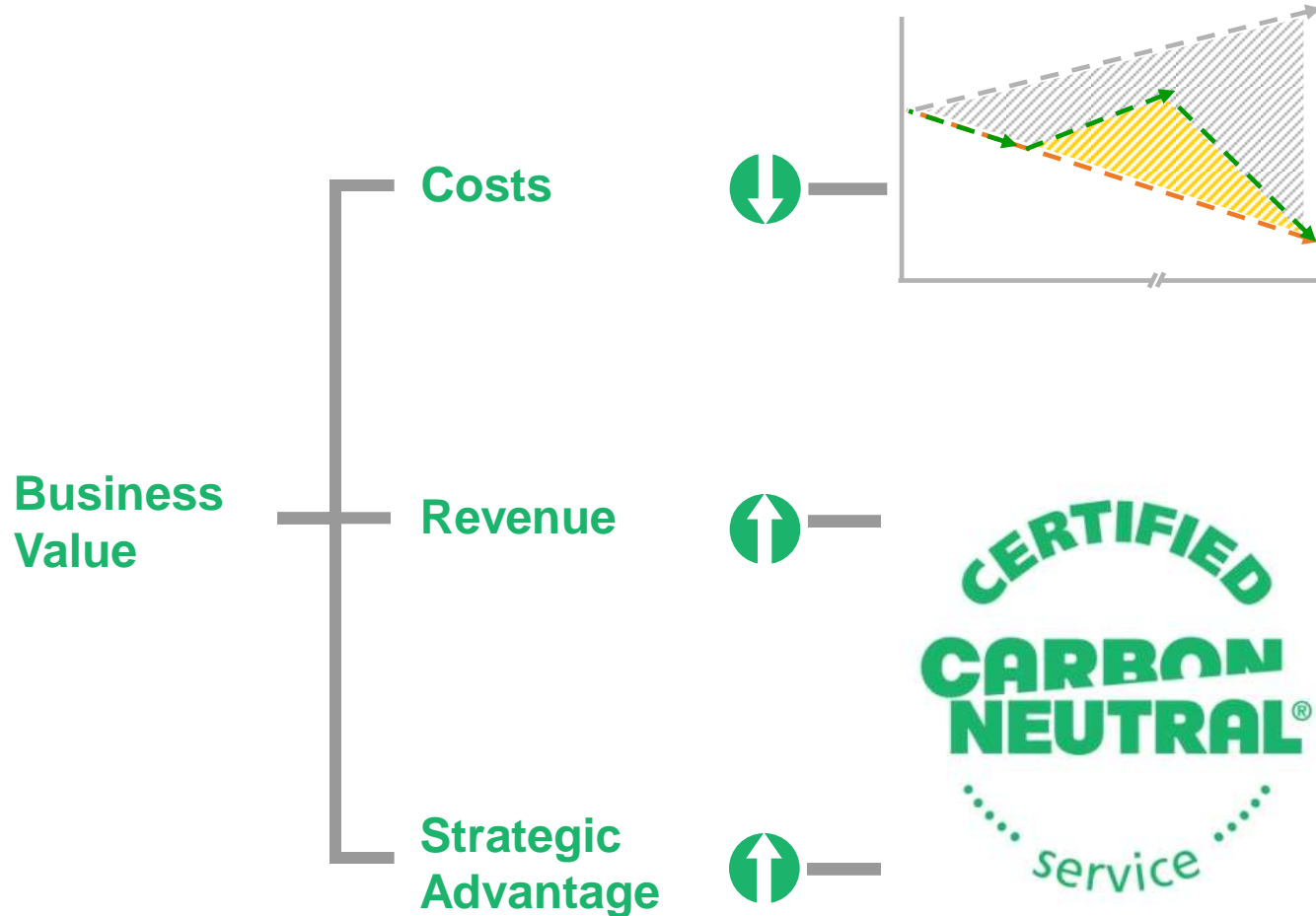
THE
CARBON
NEUTRAL
COMPANY

Rationale for offset-inclusive strategies

Action across the global economy is required

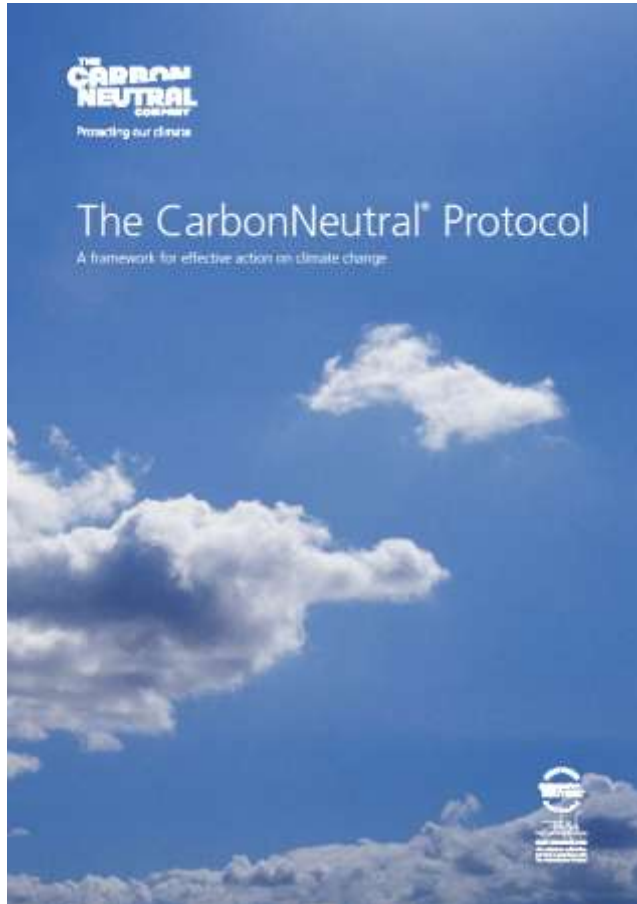


Capturing value from action beyond regulation



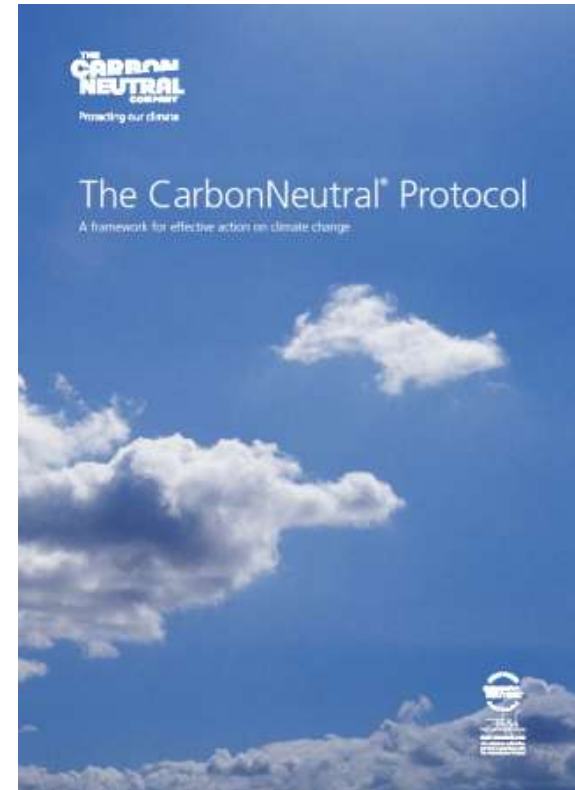
John Marks
.....
CarbonNeutral.com
CO₂ emissions reduced to net zero in accordance with The CarbonNeutral Protocol

A framework for effective action on climate










The CarbonNeutral® Protocol

- The CarbonNeutral® Protocol is the standard to which we operate
- Describes the requirements for achieving the CarbonNeutral brand mark including:
 - Carbon footprinting
 - Internal reductions
 - External reductions
 - Branding & communications
- The CNP is one of the most recognized branded standards for beyond-compliance action on climate change
- Its development and our application of the associated processes are informed by and Independent Advisory Group of NGO's, scientists, academics and businesses



Working with a trusted partner is critical

| | | |
|---|---|---|
| Independent experts used to calculate client carbon Footprints | ✓ |  |
| Footprints calculated in accordance with internationally accepted standards: WBCSD/WRI - GHG Protocol | ✓ |  |
| Source standards of carbon credits to meet our clients requirements | ✓ |  |
| Robust independent evidence that the CO2 reductions promised to clients are delivered | ✓ |  |
| Guarantee that every ton of carbon offset purchased by our clients is delivered | ✓ | 100% |
| Publicly publish all emission reduction projects on an online publicly accessible registry | ✓ |  |
| A published carbon accounting policy and subject our application of it to annual independent audits | ✓ |  |
| Guidance from an independent advisory group of experts from industry, NGO's, policy makers and academia | ✓ | Independent Advisory Group |
| Member of ICROA (International Carbon Reduction & Offset Alliance) and subject to the ICROA code of best practice | ✓ |  |

How it works in practice: Belfast Harbour

World first with CarbonNeutral® status in 2008

- Targeting 20% reduction by 2012 by engaging with staff, tenants and local residents
- “Green Tariff” electricity, & exploring on-site renewable solutions.
- Harbour Environmental Forum incorporates a “best practice” club & resource efficiency workshops.
- Innovative street- and flood-lighting pilot scheme for areas such as quays, public amenity areas & streets.
- Developed cartoon character, Webster ‘The Port Monster’, to engage local schools & community.
- Retired quality carbon offsets from renewable energy projects in China, Peru & India to get to net-zero.



How it works in practice: Belfast Harbour

Results

- CO2 emissions reduced by 12% overall since 2005.
- Recycling increased from 38% to 72%, & landfill waste reduced by 240 tonnes.
- Raised the port profile substantively since becoming CarbonNeutral®.
- 'Irish Port of the Year' in Annual Export & Freight Transport & Logistics Awards
- Safety and Environmental Manager named 'Environmental Leader of the Year' at Sustainable Ireland Energy, Environmental & Waste Management Awards
- Awards for Webster 'the Port Monster' environmental education programme



The process

Plan the programme



Acco₂unt solution for Greenport 2010

- Acco₂unt enables ports to measure and manage carbon emissions using an efficient and consistent methodology.
- Benefits of Acco₂unt:
 - Single repository of data from operational data already held in disparate sources.
 - Automatic calculations remove manual processes and reduce the margin of error.
 - Accurate baselines give more effective, targeted reduction & management plans.
 - Automated reports meet internal and compliance reporting requirements.
- Visit The CarbonNeutral Company booth for further information.

Create your port's organisational structure and scope

The screenshot displays the 'View Management > Single Port' interface. The top navigation bar includes 'HOME', 'INPUTS', 'ANALYSIS', 'REPORTS', 'STRATEGY', and 'ADMIN'. The user is logged in as 'portdemo@greenstonecarbon.co'. The left sidebar shows 'View Management' as the active section. The main area shows a tree structure for 'Port Demo' with nodes for 'Fixed Sources' (Cranes, Reefers, Terminal Lighting, Offices, CFS, HQ, Warehouses) and 'Mobile Sources' (Forklift Trucks, Lorries, RMG, RTG, Stackers, Straddle Carriers). Each node has 'Add Node' and 'Delete' buttons. The right panel, 'Organisational Views', shows a table of existing views.

| Organisational Views | | | | |
|-------------------------------------|----------------|-------------|--|--|
| + Add new Organisation View Refresh | | | | |
| Edit | Single Port | 16-Apr-2010 | | |
| Edit | Port Authority | 15-Apr-2010 | | |
| Edit | Multiple Ports | 15-Apr-2010 | | |

Greenstone
Carbon Management

View an auditable and transparent data audit trail

The screenshot displays the Accountenterprise web application interface. At the top, there are logos for Greenstone Carbon Management, THE CARBON NEUTRAL COMPANY, and Accountenterprise. A navigation menu includes HOME, INPUTS, ANALYSIS, REPORTS, STRATEGY, and ADMIN. The user is logged in as portdemo@greenstonecarbon.co.uk.

The main content area is titled "Input Data" and features a search form with fields for "Node Name", "Status" (a dropdown menu), and "Last Updated" (with "From" and "To" date pickers and a "Search" button). An "Options" panel on the right contains checkboxes for "Display Deleted Files" and "Auto Refresh".

Below the search form is a breadcrumb trail: "Port Demo > Fixed Sources > Offices > HQ". An "Upload File" button is located to the right of the breadcrumb.

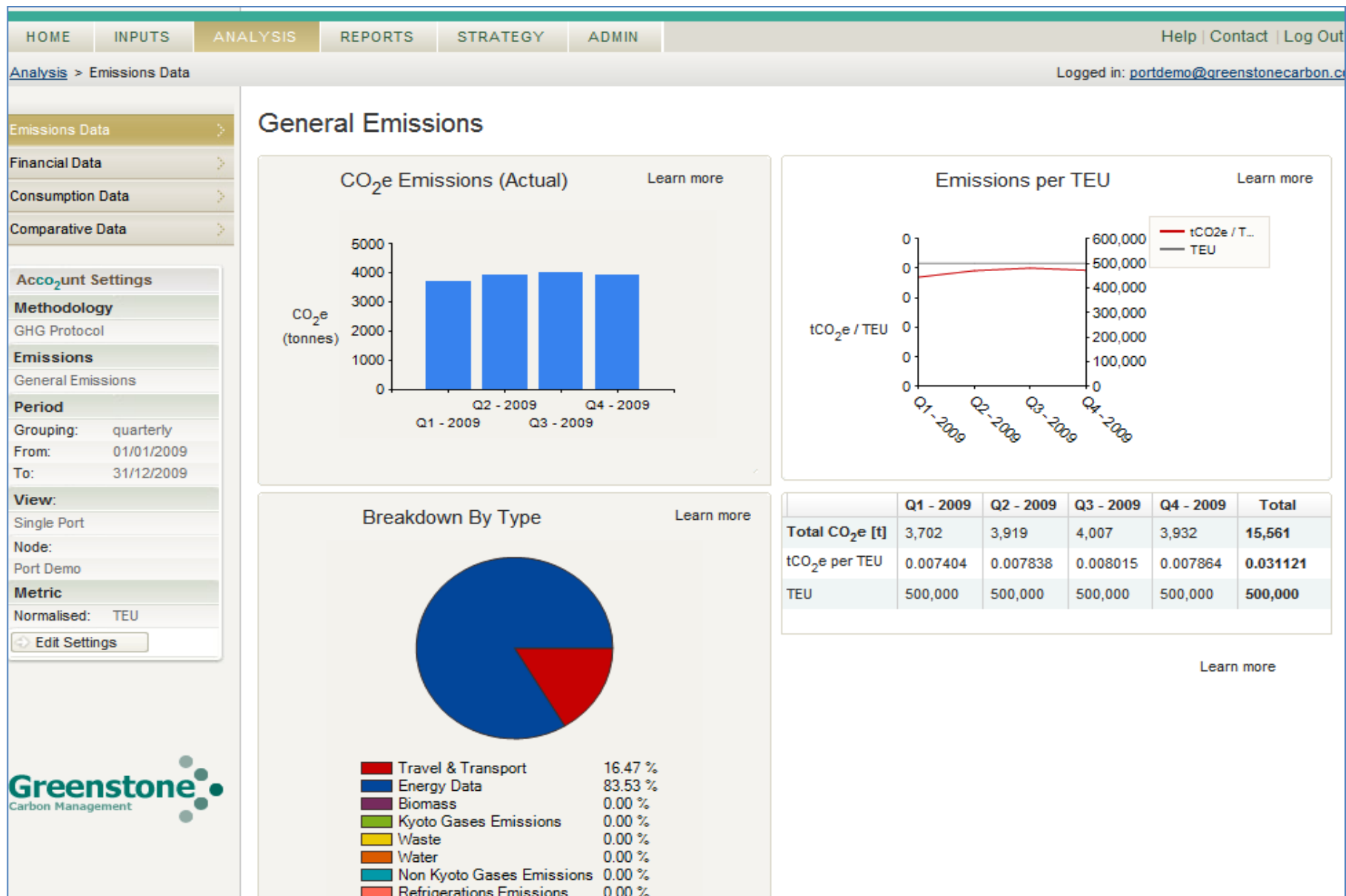
The main data table lists input nodes with columns for "Status", "Last Updated", and "User". The "Electricity" node is expanded to show a detailed audit trail table with columns for "Filename", "Status", "Date Uploaded", and "User".

| Status | Last Updated | User |
|---------|--------------|------|
| Updated | 12/04/2010 | |

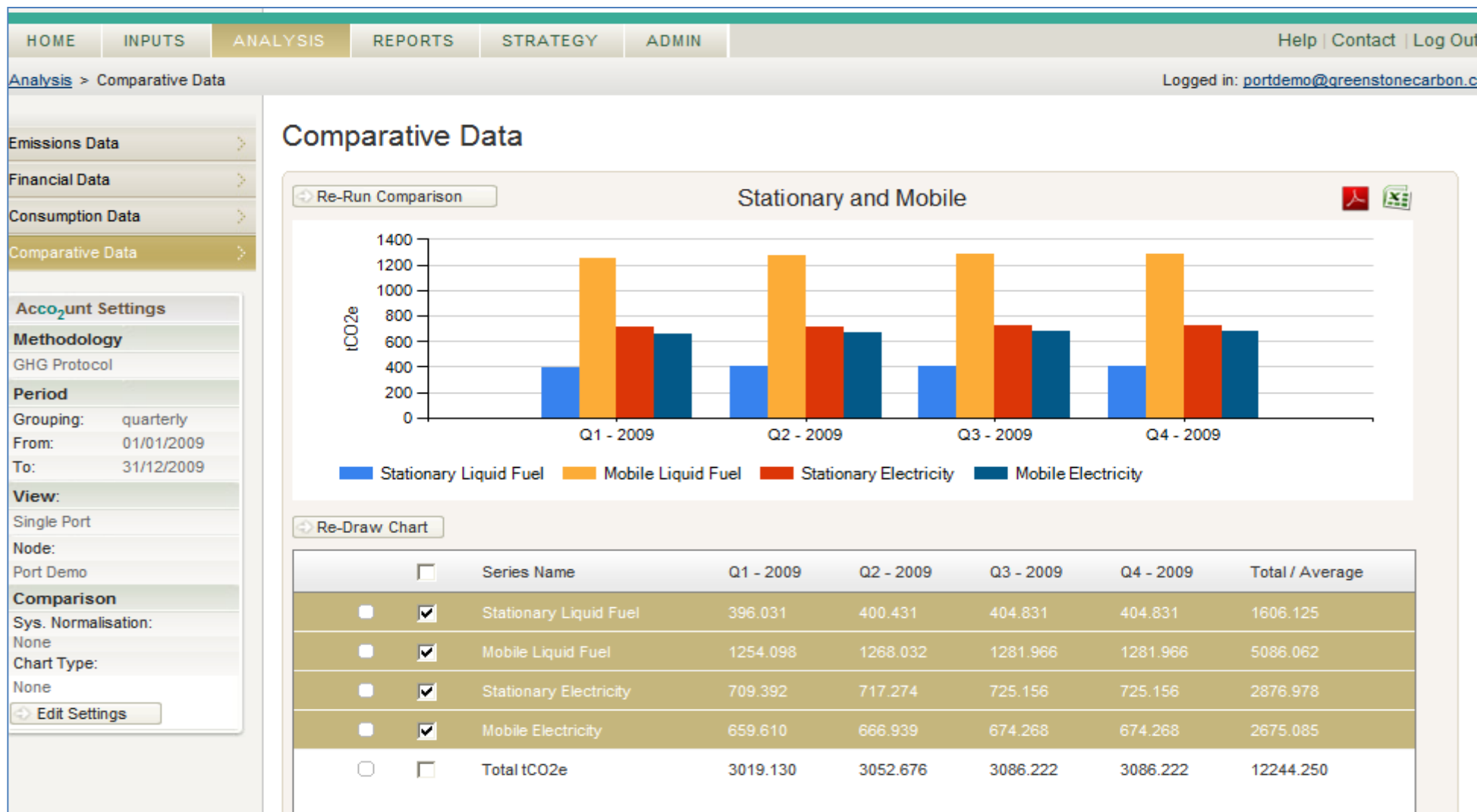
| Filename | Status | Date Uploaded | User |
|------------------|-----------|---------------------|--------------------|
| Port Data_09.xls | Completed | 12/04/2010 13:42:56 | Administrator User |

| Node Name | Status | Last Updated | User |
|-------------|---------|--------------|------|
| Electricity | Updated | 12/04/2010 | |
| Gas | Updated | 12/04/2010 | |
| Travel Rail | Updated | 16/04/2010 | |
| Travel Road | Updated | 16/04/2010 | |

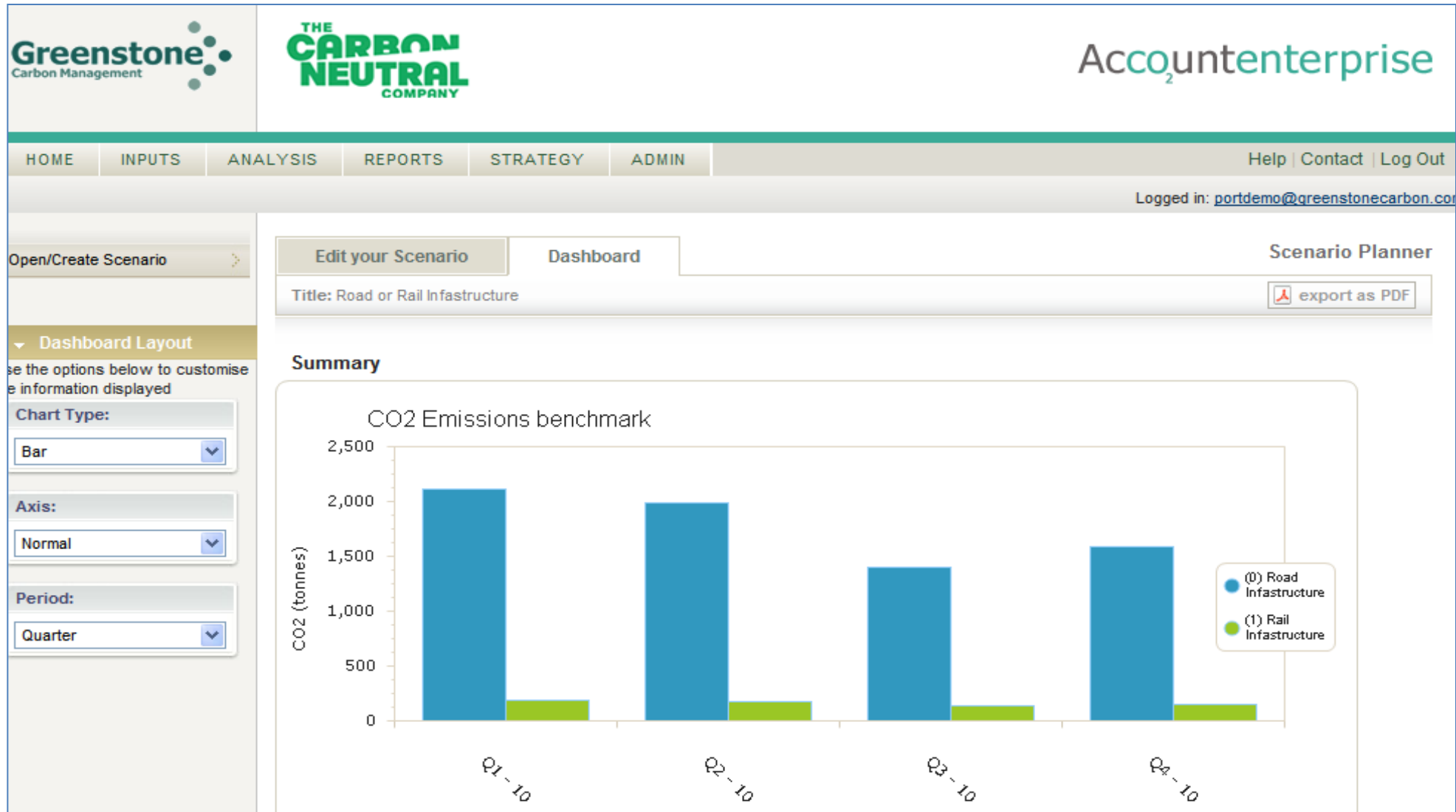
View CO₂e at any organisational level and per TEU



Compare different parts of your organisation



Model “what if” analyses of future reduction projects



Set reduction targets at any organisational level

The screenshot displays the 'Targets Dashboard' in the Acco2untenterprise application. The top navigation bar includes 'HOME', 'INPUTS', 'ANALYSIS', 'REPORTS', 'STRATEGY', and 'ADMIN'. The sidebar on the left contains 'Targets Dashboard' and 'Set Targets' options, along with 'Acco2unt Settings' for 'Port Demo' (quarterly, 01/01/2009 to 31/12/2009). The main content area features a table with the following data:

| Name | Emission Type | Target | Target Date | Action(s) | Progress | Achieved |
|----------------|-------------------|---------|----------------------------------|-----------|----------|-------------------------------|
| Port Demo | General Emissions | 10.00 % | 01/01/2009 - 31/12/2010 (Yearly) | | | 158.70 % View |
| Fixed Sources | General Emissions | 5.73 % | 01/01/2009 - 31/12/2010 (Yearly) | | | 130.44 % View |
| Mobile Sources | General Emissions | 12.88 % | 01/01/2009 - 31/12/2010 (Yearly) | | | 187.12 % View |



Webinars May 19th and 20th !!

Thank You!

Mark LaCroix

mark.lacroix@carbonneutral.com

