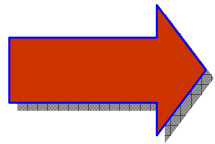




Carbon Project Registry Systems and International Carbon Market Regulations

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Agenda



International Regulatory Context

Carbon Project Registry Systems

The Way Forward





The International Regulatory Context

- Voluntary carbon markets are defined by a lack of regulatory drivers
 - Operate alongside their regulated market cousins
 - Heavily influenced by them
- Understanding the basics of the regulatory markets is key to exploring the voluntary side of carbon trading
- The Kyoto Protocol is legally binding
 - launched largest global compliance carbon market
 - target of 5.4% reductions below 1990 emissions levels by 2012.
 - “Flexibility mechanisms” include:
 - Emissions trading, Joint Implementation (JI), and the Clean Development Mechanism (CDM).



The International Regulatory Context (continued)

- Although the US did not ratify Kyoto, many legally binding state and regional GHG reduction initiatives exist
 - Regional GHG Initiative (RGGI)
 - California's Global Warming Solutions Act (AB 32)
 - Western Climate Initiative
 - Midwestern Regional GHG Reduction Program (MRP)
- An Australian state-level emissions reduction program, the New South Wales GHG Abatement Scheme (NSW GGAS)
 - World's second largest regulated, cap-and-trade GHG market



The International Regulatory Context (continued)

- Oregon Standard (enacted 1997)
 - First regulation of CO₂ in the United States
 - Impacts new power plants built in Oregon
 - Reduce CO₂ emissions to 17% below those of most efficient combined cycle plant
 - Direct reduction or offsets
 - Propose offset projects or pay mitigation funds to The Climate Trust
 - Non-profit implements projects to avoid, sequester, or displace CO₂ emissions
- Regional Greenhouse Gas Initiative (RGGI - launched 2009)
 - Ten East Coast states - Connecticut, Delaware, Maryland, Massachusetts, Maine, New Hampshire, New Jersey, New York, Rhode Island, and Vermont
 - Cap-and-trade system
 - At least 25% of allowances to “consumer benefit programs”
 - States maintain autonomy over remaining 75% of allowances.



The International Regulatory Context (continued)

- California's Global Warming Solutions Act (AB 32)
 - First US state-wide program to cap all GHG emissions from major industries
 - Includes penalties for non-compliance
 - market-based incentives using free and **auctioned** pollution permits
- Western Climate Initiative (WCI - formed 2007)
 - California, New Mexico, Oregon, Washington, Arizona, and Utah as well as British Columbia, Manitoba, and Quebec
 - Coverage of approximately 886MtCO₂e/yr by 2012
- Midwestern Regional GHG Reduction Program (MRP - 2007)
 - Will cover approximately 1,107MtCO₂e/yr by 2012

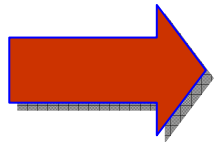


The International Regulatory Context (continued)

- The Climate Registry (signed 2008)
 - 39 US and 6 Mexican states, DC, 3 Native American nations, 6 Canadian provinces
 - Facilitates regulatory and voluntary reporting
 - Could influence Federal cap-and-trade initiative
- New South Wales (NSW) Greenhouse Gas Abatement Scheme (GGAS)
 - Australian mandatory state-level program launched in 2003
 - Reduce emissions associated with production & use of electricity;
 - Develop & encourage activities to offset production of GHG emissions
 - Outside of Kyoto markets, is world's largest, cap-and-trade GHG market
 - 25.41 MtCO₂e, worth US\$224.10 million, traded in 2007
- European Union (EU-ETS) Launched in 2005

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International Regulatory Context



Carbon Project Registry System

The Way Forward





Carbon Project Registries: Tracking the Trades

- Registries provide a host of market services
 - Tracking credit sales and ownership
 - Increasing market efficiency through information sharing
 - Protecting against “double counting.”
- Registries are typically classified into two categories
 - Emissions tracking registries
 - Track buyer entities’ emissions and reductions
 - Establish baselines and account for emission reductions
 - Critical tool for cap-and-trade systems
 - Carbon credit accounting registries
 - Report on transactions of credits, allowances, and offsets
 - Create a “substantial new commoditized, fungible asset class”



Carbon Project Registries: The Architecture

- Most registries
 - Are public or semi-public databases and transparent
 - Depend on third party standards to screen and classify credits
 - Impose some level of legal liability on registrants
- Third party verification is not required - but 87% of all credits in the voluntary OTC market are third party verified
- Several standards are popular
 - VCS -- used by 24% of organizations
 - Gold Standard -- used by 18%
 - VER+ -- used by 10%
 - CCSB -- Used by 10%



Carbon Project Registries: The Cost

- The cost of listing credits on an OTC registry varies widely
 - Difficult to pin down - registries bundle their services differently.
- ERT's GHG Registry charges
 - \$2,000 - \$6,000 for opening an account
 - annual renewal fee of \$1,500 to \$5,000
 - \$.035/ tCO₂e administrative transaction and software system fee.
- New Zealand-based Regi
 - account registration for buyers/sellers is free
 - per-project verification costs are \$149
 - transaction fees around \$0.23 per credit transferred
 - \$0.04 for each credit retired (fixed cost of \$1.12 for each transfe.
- ERT services can include third party verification, whereas Regi only accepts credits that have already passed inspection by a certification service.



Carbon Project Registries: Usage Data

- Several registries are being used
 - CCX -- 12%
 - Blue Registry -- 13%
 - CDM/JI -- 18%
 - Gold Standard Registry -- 4%
 - Environmental Resources Trust -- 5%
 - US DOE 160% (b) -- 4%
 - CCAR -- 2%
 - New South Wales -- 2%
 - Bank of NY -- 0.08%
 - Other --14%
 - Retailers' own specific registry -- 26%



Third Party Registries: Examples

- ***Asia Carbon Registry (ACR) - 2007***
 - Asia Carbon Group (ACG) developed ACR for VERs
 - ACG provides carbon advisory, finance, and asset management services under several different initiatives
 - Registry accepts credits utilizing a variety of standards, including the VCS and the Gold Standard
 - Services include electronic listing, transferring, and eventually retiring VERs.
- ***Environmental Resources Trust GHG Registry Program - 1997***
 - Longest-standing registry in the voluntary carbon markets
 - Tracks both “qualified emissions reductions” and actual carbon credits
 - Buyers and suppliers can register tonnes, the credits from which they may either re-sell or retire
 - Provides third party validation/verification services - standards vary (case-by-case)



Third Party Registries: Examples

- ***GHG CleanProjects Registry***

- The Canadian Registry's chief objective is to list and de-list GHG reduction projects that result in Verified Emission Reduction-Removal credits (VERRs) for the voluntary and regulated markets
- May attach a unique serial number to each VERR representing one tCO₂e
- VERR classification requires adherence to the ISO 14064 standards.

- ***The Registry Company "Regi"***

- Operated by M-Co, a private company that works in electricity markets
- Tailored to New Zealand's voluntary carbon market
- Will consider foreign account requests on a case-by-case basis
- Accepts Voluntary Carbon Standard and Gold Standard credits
- High level of transparency
- Website lists Certificate Summary and information on offset providers, project names, credit types & volume, and transaction status.



Exchange, Standard, Verifier and Supplier Registries: Examples

- ***The Bank of New York's Global Registry and Custody Service for Voluntary Carbon Units***
 - Created to become a means of accounting for the Voluntary Carbon Standard's Voluntary Carbon Units (VCUs)
 - Aims to streamline and legitimize the trading process of VCUs
 - Centralized, electronic, and private accounting system stores VCUs
 - Assigns each a unique serial number for tracking and verification purposes
 - Provides clear parameters for defining account ownership
 - Requires certification under the VCS and account information is not publicly disclosed.
- ***TUV SUD's BlueRegistry***
 - The company validates/verifies both Kyoto and voluntary emission credits
 - Registry is a database of certified VERs and renewable energy credits
 - Initially, exclusive to VER+ credits and renewable energy certificates
 - Aim: "master" registry for voluntary carbon credits, including CCX CFIs and VCUs.
 - Transparent, and maintains publicly available information on factors such as credit-type, credit ownership and vintage.



Exchange, Standard, Verifier and Supplier Registries: Examples

- ***The California Climate Action Registry's (CCAR) Climate Action Reserve***
 - CCAR was established by California law as a non-profit voluntary registry for GHG emissions to
 - Protect and reward companies that reduce emissions
 - Climate Action Reserve launched on April 14, 2007 to track and register voluntary projects verified to CCAR protocols.
 - CCAR currently has approved protocols for livestock methane and forest activities
 - Will soon release a natural gas transmission and distribution reporting and certification protocol.



Exchange, Standard, Verifier and Supplier Registries: Examples

- ***The Chicago Climate Exchange (CCX) Registry***
 - An accounting system for the CCX's cap- and-trade scheme
 - Suppliers seeking to include their credits in the registry must be members
 - Offsets need approval of CCX Committee on Offsets
 - Assigns serial numbers to ensuing third party-verified credits
 - Registry is both an emissions reductions tracking program and a carbon credit accounting system
 - Somewhat transparent, providing publicly-available information regarding the offset provider/aggregator, project type and location, as well as transaction volume.



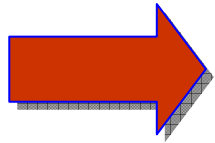
Newer Registries: Example

- ***Gold Standard Registry for VERs - 2008***
 - Gold Standard Foundation and APX created registry
 - creates, tracks, and enables the transfer of Gold Standard certified VERs, ERUs, and CERs.
 - Low-cost and transparent electronic database
 - Registered users can access information on the status of credits (such as whether they are re-sellable or retired)
 - Serialization of each Gold Standard VER credit
 - Double-entry accounting framework
 - Full ownership and transaction tracking for VERs, ERUs, and CERs.

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International Regulatory Context

Carbon Project Registry System



The Way Forward





Investments through VERs are viable options for Annex-1 countries under the UNFCCC

- To promote economic development goals, the nation needs to attract additional foreign direct investment (FDI)
- Projects developed under UNFCCC norms to generate VERs are a viable option
- The VER market is growing rapidly with active VER registries in Europe, Australia and the US -- market expected to grow rapidly
- The VER market needs careful analysis
 - Who is buying/selling and why are they buying/selling
 - What is the “life” of a VER -- when is it retired?
 - What is the “churn rate” of VERs?



Investments options should address “additionality”

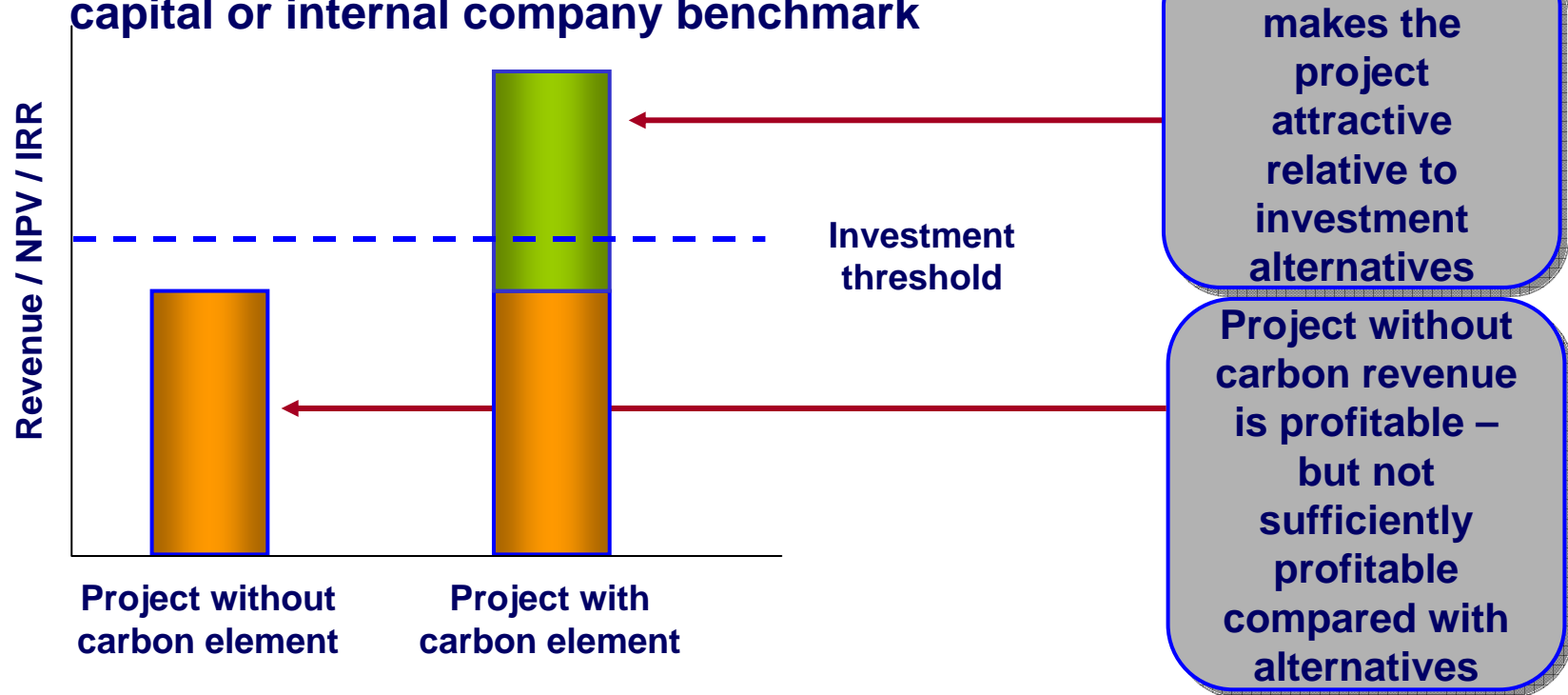
Environmental additionality – the project produces fewer greenhouse gas emissions than the baseline scenario

It is essential that the project achieve environmental additionality – otherwise, it will not generate any carbon credits!

However, the project developer must also usually demonstrate that, without carbon revenues, the project would not be viable and/or commercially attractive – this is known as **financial additionality**

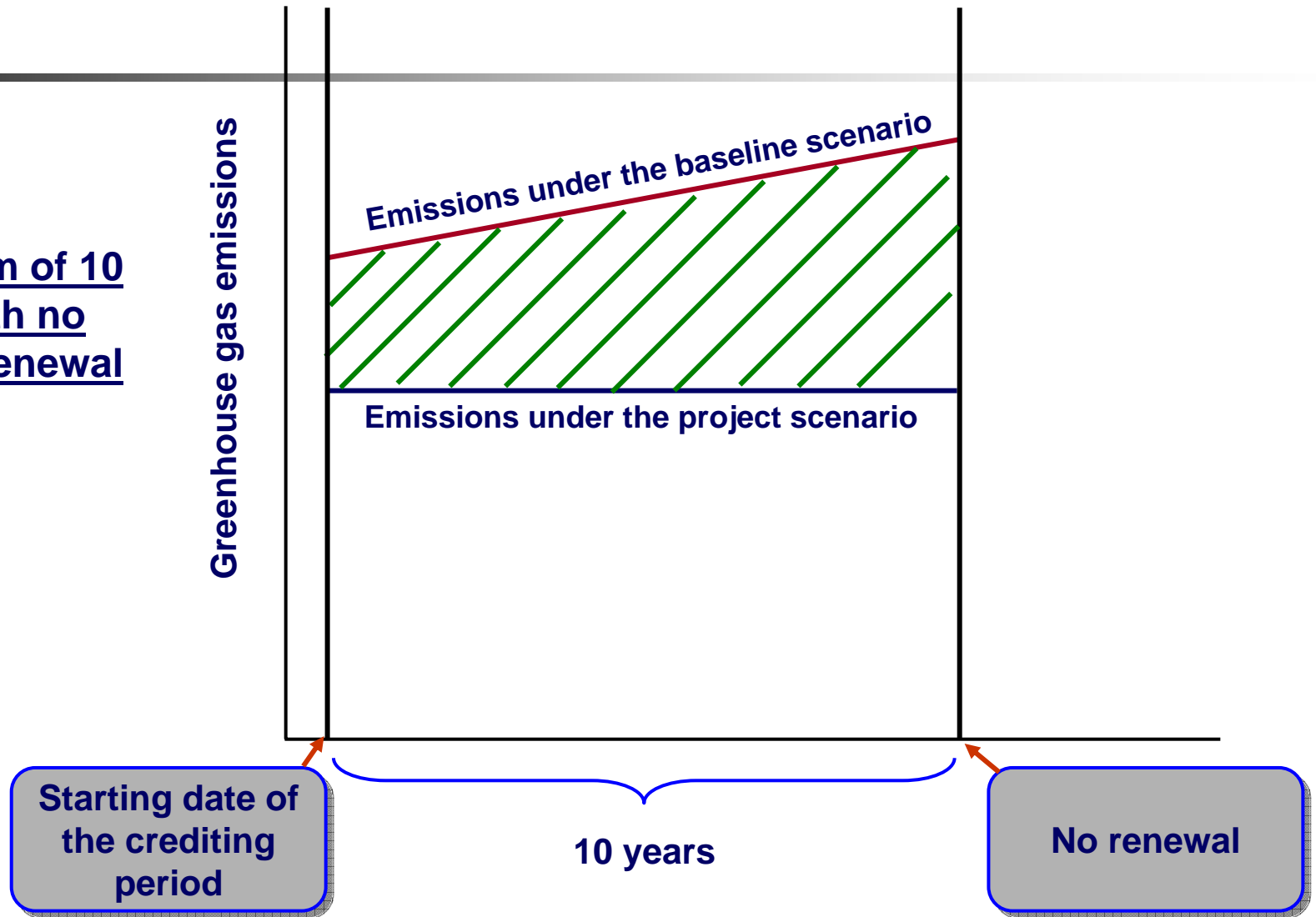
UNFCCC guideline: “additionality” – benchmark analysis

Choose an appropriate financial indicator and compare it with a relevant benchmark value: e.g. required return on capital or internal company benchmark



UNFCCC requirement: crediting period

A maximum of 10 years with no option of renewal





Establish an “enabling environment”

- Conduct a needs assessment to identify priority sectors and gaps in command-and-control regime
- Develop and strengthen standards, permit process, monitoring protocols and enforcement mechanisms
- Develop and harmonize laws, implementing regulations and institutional support
- Develop baseline data, starting with priority sectors
- Determine evaluation methods and guidelines