

CLIMATE LEADERS

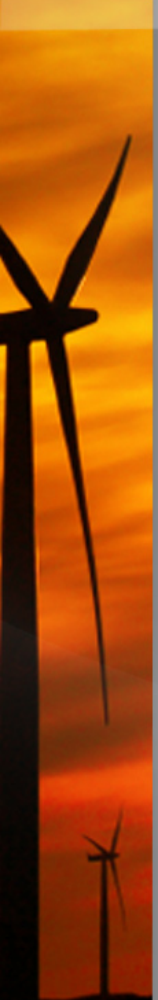
SETTING THE STANDARD IN GREENHOUSE GAS MANAGEMENT

Ranking the Cost and Carbon Effectiveness
of Clean Energy Projects



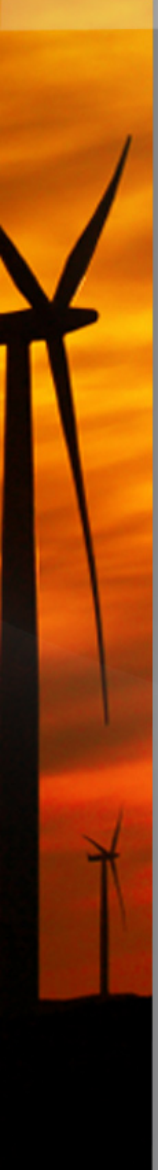
Decision frameworks for cost and carbon effectiveness can be useful

- Make the business case and win support
- Capital is scarce, and spending is under scrutiny
- Goal achievement is becoming the major issue for Climate Leaders
- Over time, incremental reductions tend to be more expensive
- Decide whether to implement or postpone projects with marginal returns
- Decide whether to make GHG reductions internally or buy on the market
- Evaluate profit through carbon trading and market positions



2 separate (but related) points to consider in relation to IRR:

1. Marginal Abatement Cost Curve (MACC):
Use the IRR hurdle rate to reveal the implied cost of carbon reductions
2. Shadow pricing: Integrate a carbon price into IRR calculations to test sensitivities



Carbon Value Analysis Tool (CVAT), version 1.3

World Resources Institute



Introduction

Overview: The Carbon Value Analysis Tool (CVAT) is a screening tool to help companies integrate the value of carbon dioxide emissions reductions into energy-related project finance decisions. It has two main purposes:

Test the sensitivity of a project's internal rate of return (IRR) to "carbon value" (the value of GHG emissions reductions). CVAT integrates this value into traditional financial analysis by ascribing a market price, either actual or projected, to carbon emissions reductions.

Facilitate the development of emissions reduction strategies by developing a Marginal Abatement Cost Curve (MACC) across a portfolio of projects. CVAT ranks projects so managers can prioritize them according to their implicit cost per tonne of carbon emission reduction.

Operating Requirements: Excel 2000 or later. Some functionality may be lost with earlier versions of Excel. Security level must be set to Medium and Macros must be enabled to operate CVAT. To enable macros, click on Tools > Macros > Security > Medium from the Toolbar Menu.

CVAT operates most efficiently when Auto-Save is turned off: [Auto Save Off](#)

To Begin: Click on "Analyze a Project" or "Project Portfolio" below:

Analyze a Project

- Conduct cash flow analysis
- Calculate marginal abatement cost
- Estimate emissions reductions
- Analyze the carbon value of the project
- Perform risk analysis
- Modify energy price and foreign exchange assumptions
- Save calculations to a project portfolio

Project Portfolio

- View project portfolio database
- Sort database and compare projects
- View marginal abatement cost curve

Help: For assistance, click on any [Help Link](#) or help symbol: 

Version 1.3 release date: March 2008

CVAT Overview

FAQ

Acknowledgement

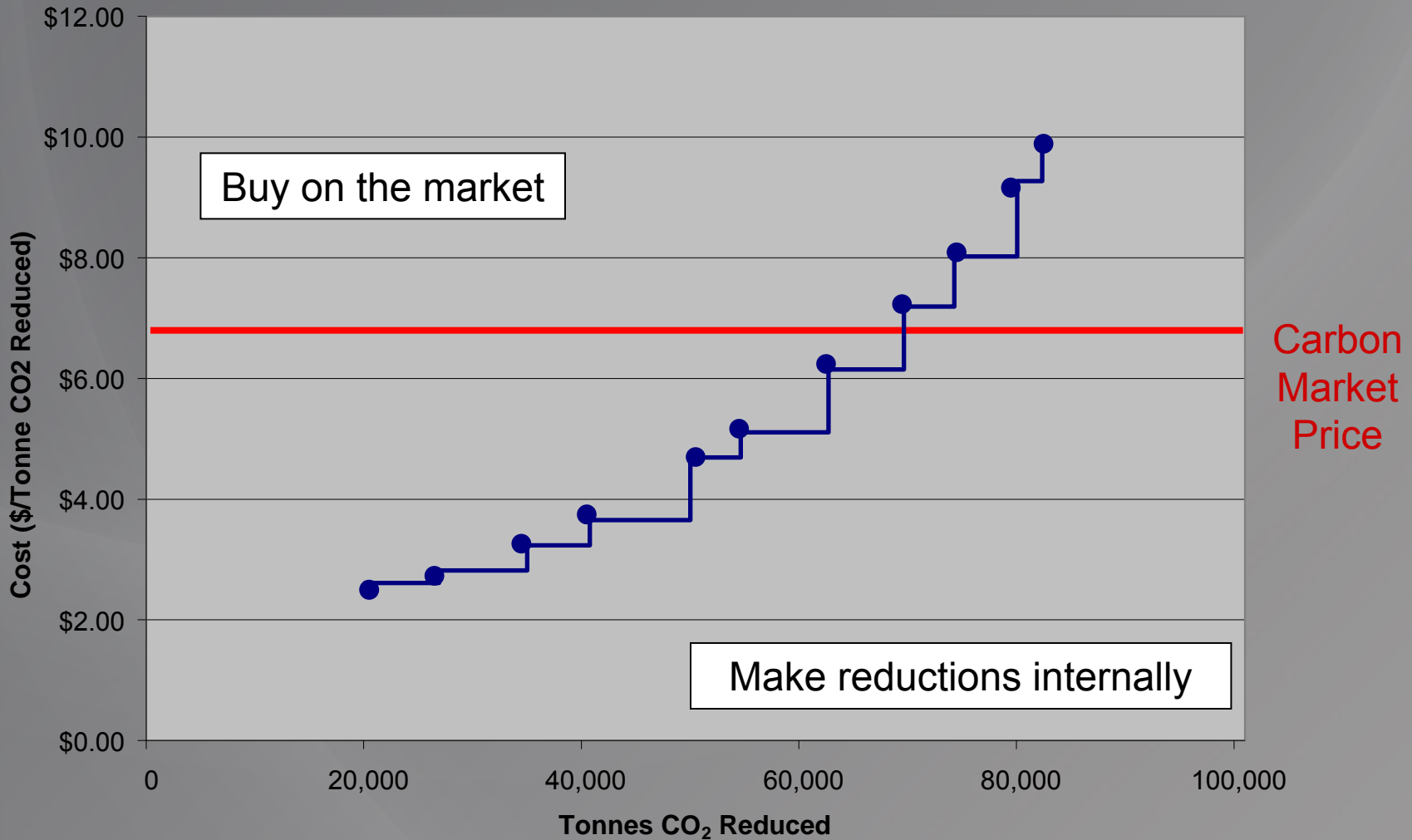
Disclaimer

Rank projects by cost per tonne of CO₂

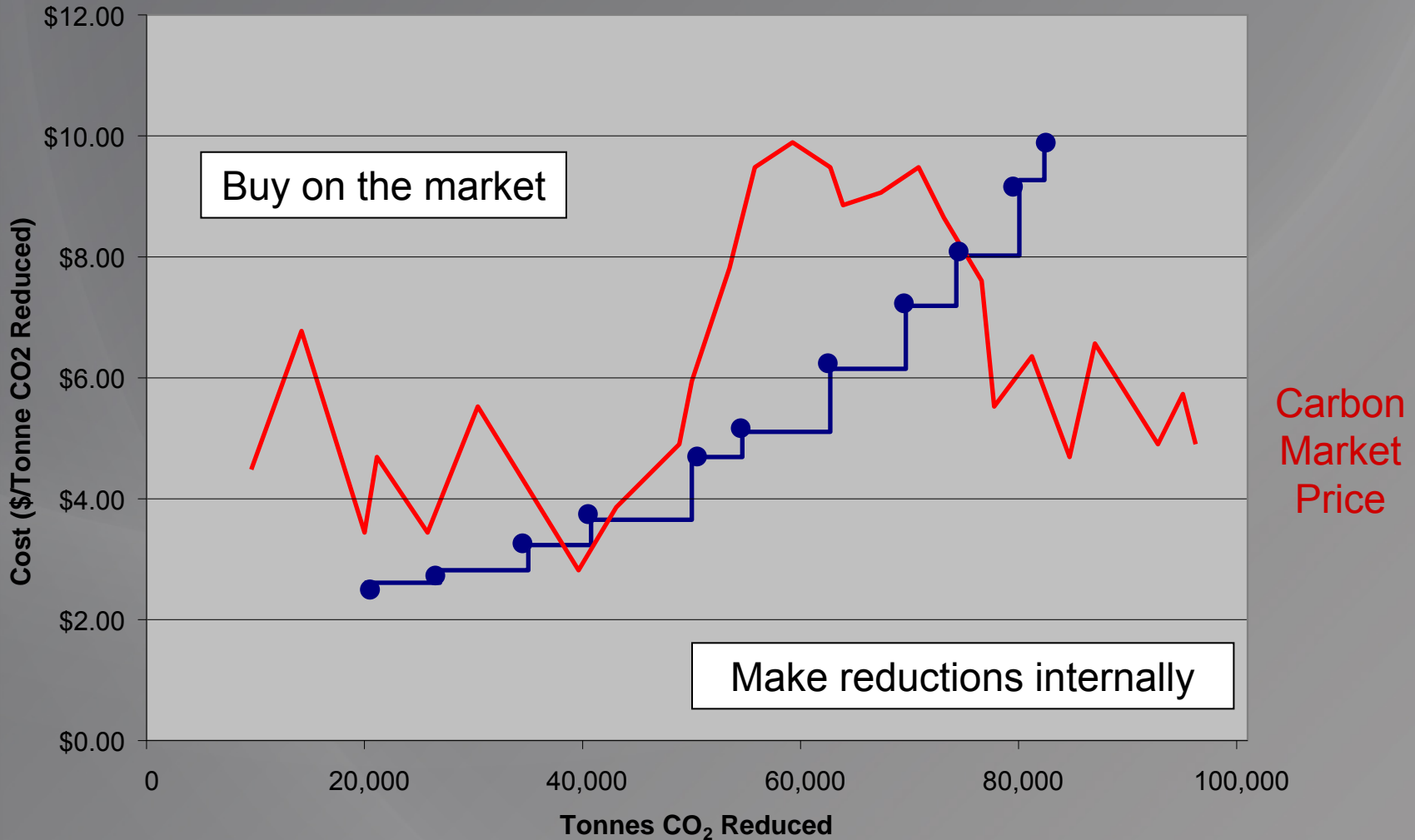
Hypothetical Project Portfolio

Project	Tonnes CO ₂ Reduced	Cost per Tonne	Total Cost of Reductions	Cumulative Abatement (tonnes)	Cumulative Cost (\$)
A	20,000	\$2.50	\$50,000	20,000	\$50,000
B	6,000	\$3.50	\$21,000	26,000	\$71,000
C	8,000	\$5.00	\$40,000	34,000	\$111,000
D	6,000	\$6.50	\$39,000	40,000	\$150,000
E	10,000	\$8.50	\$85,000	50,000	\$235,000
F	4,000	\$11.00	\$44,000	54,000	\$279,000
G	8,000	\$13.50	\$108,000	62,000	\$387,000
H	7,000	\$16.00	\$112,000	69,000	\$499,000
I	5,000	\$20.00	\$100,000	74,000	\$599,000
J	5,000	\$25.00	\$125,000	79,000	\$724,000
K	3,000	\$29.00	\$87,000	82,000	\$811,000

The “make or buy” decision

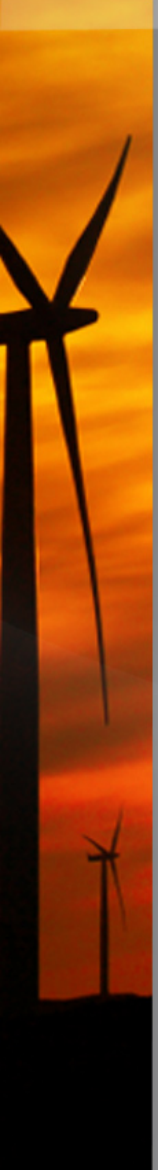


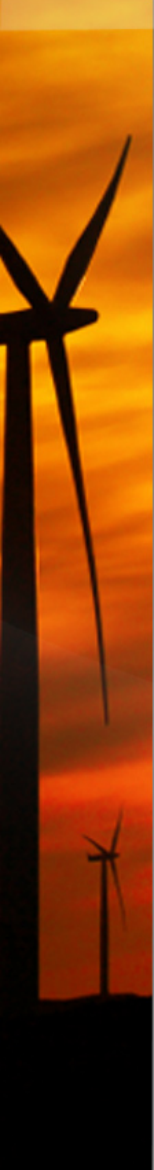
Need to consider market price fluctuations



Potential solutions to navigating high hurdle rate barriers

- bundle projects into a portfolio for approval
- use appropriate energy price forecasts
- value the hedge
- stress the low risk
- capitalize on state and federal incentives
- use operational budget – “bypass the system”
- use incremental capital costs for high-efficiency equipment
- get approval for different hurdle rates





Thank You

Comments & Questions