Institutional Management of Greenhouse Gas Markets

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Evolution of EPA Clean Air Markets

- Trading under a cap began in 1993 (Title IV SO_2) and 1998 (NO_x Budget)
  - EPA's main role was ensuring compliance
  - Defining market structure *ex ante* was considered less important and possibly stifling to nascent market
- Market structure developed over time
  - At first, thin markets with informal trading, but quickly increased with involvement of brokers and traders
  - Regulated under contract law rather than, for instance, SEC
- Today: features of maturing markets
  - Futures trading on CCX, NYMEX
  - Presence of large financial players (J.P. Morgan, Morgan Stanley, etc.)

Concerns About GHG Markets

- Problems typically cited include:
  - Potential for economic harm from excessively high carbon prices
  - Market manipulation or excessive speculation undermines the market
- These problems are often thought to be particularly relevant to greenhouse gas market development because
  - Size and scope of carbon market (compared to existing environmental markets) raise level of concern
  - Potential for a rapid market startup with little time for market participant learning may result in unanticipated market or program failures

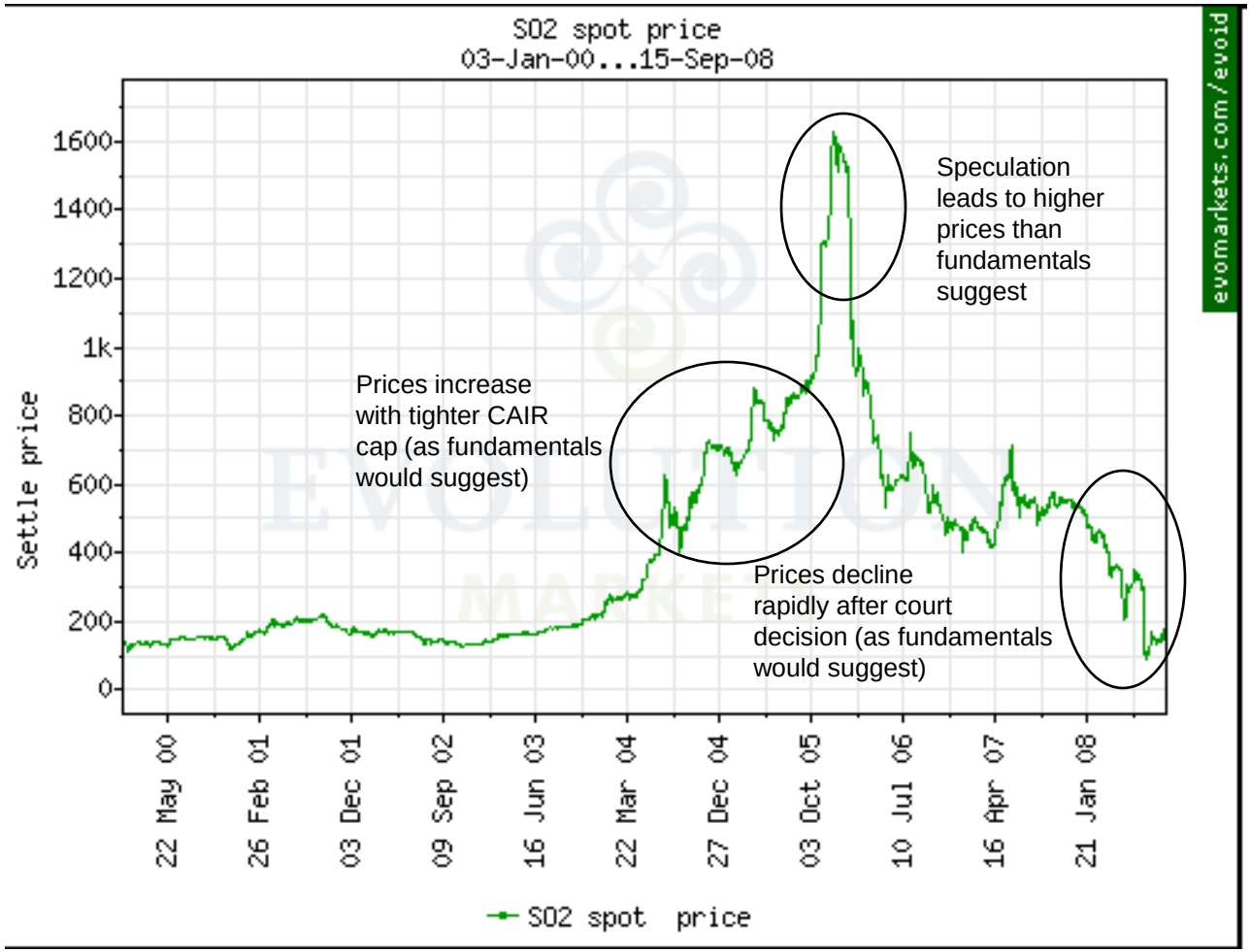
Potential Causes of Concerns

- Fundamentals, such as:
  - Higher than expected abatement costs
  - Uncertainty over technology potential
- Information limitations
  - Limited information from trade press (lack of reporting by allowance holders, limited information on volumes traded)
  - Lack of confidence in available sources (for example, where trade publications do not have ability to audit reporting firms)
  - Reporting delays in publicly available data
- Design problems
  - Inadequate banking or borrowing provisions
  - Uncertain status of market participants (e.g., Maryland in NO_X SIP Call market)
- Market manipulation or abuse
  - Concentrated holdings associated with high prices
  - Rapid trading activity that influences prices at certain times, e.g., near market close
  - Shifts between regulated and unregulated market places, e.g., exchange futures and off-exchange swaps
  - False reporting of prices to trade publications

Lessons from Existing Emissions Markets

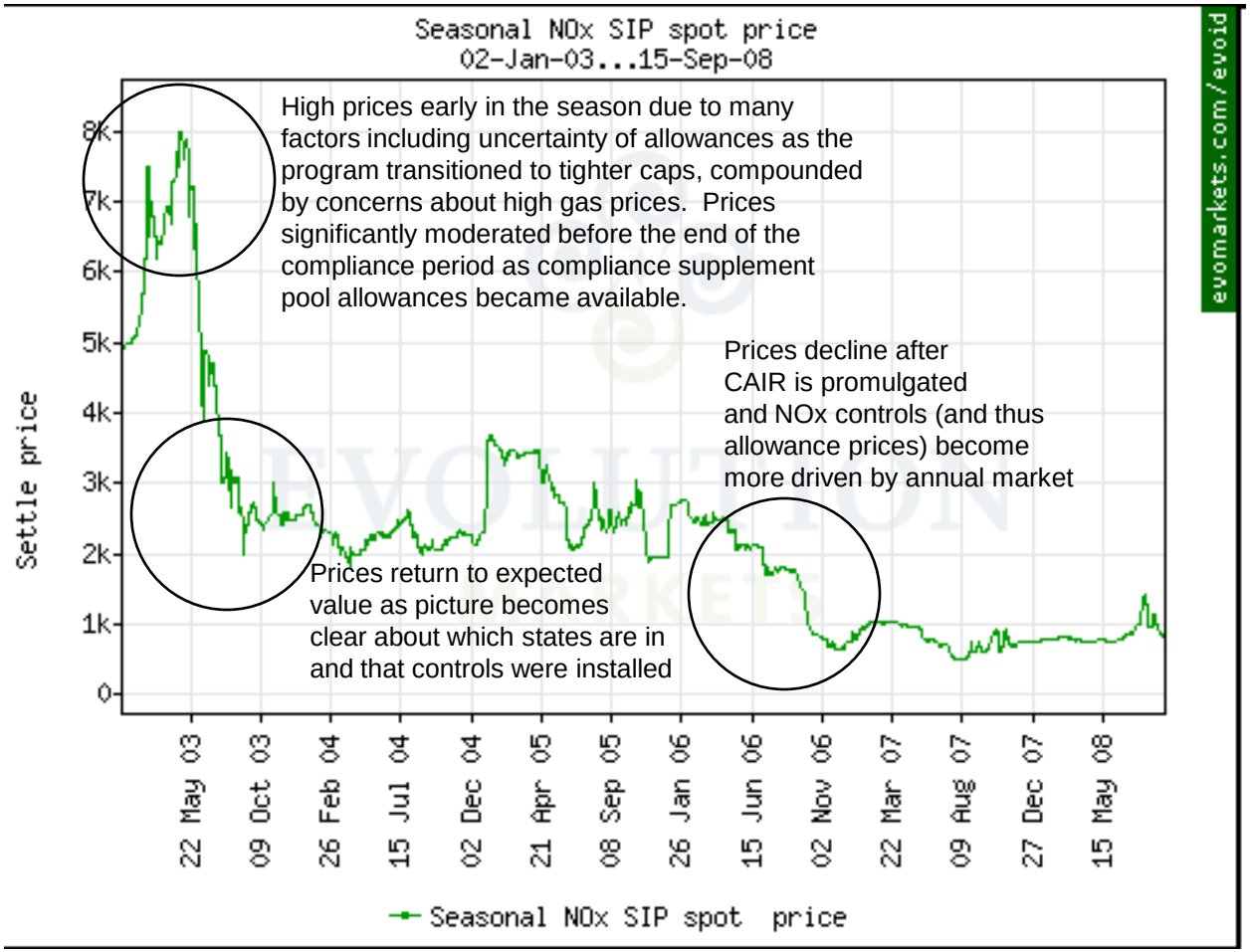
Relevant Factor	Positive Experiences	Negative Experiences
Fundamentals	- Title IV costs were less than projected early on because sources identified low cost fuel switching options, technology potential increased and costs declined	
Information	- Early reporting of emissions info in Acid Rain and NOx SIP Call helped market understand demand - Auction in Title IV provided useful early price signal - Information services have evolved to provide useful market information	- Early on in EUETS, there was limited info available about emissions - Uncertainty about which states would participate in first year of NOx SIP Call led to price volatility
Design features	- Periods of high volatility and higher than expected prices in Title IV and the NOx SIP Call have been rare and explainable	- Limited or no banking in RECLAIM and first phase of EUETS
Market performance	- There do not appear to have been any significant issues with market manipulation or abuse	- Speculation in 2005/2006 led to high prices in Title IV/CAIR SO2 market (but under conditions that do not appear to reflect market manipulation)

SO_2 Spot Settle Price



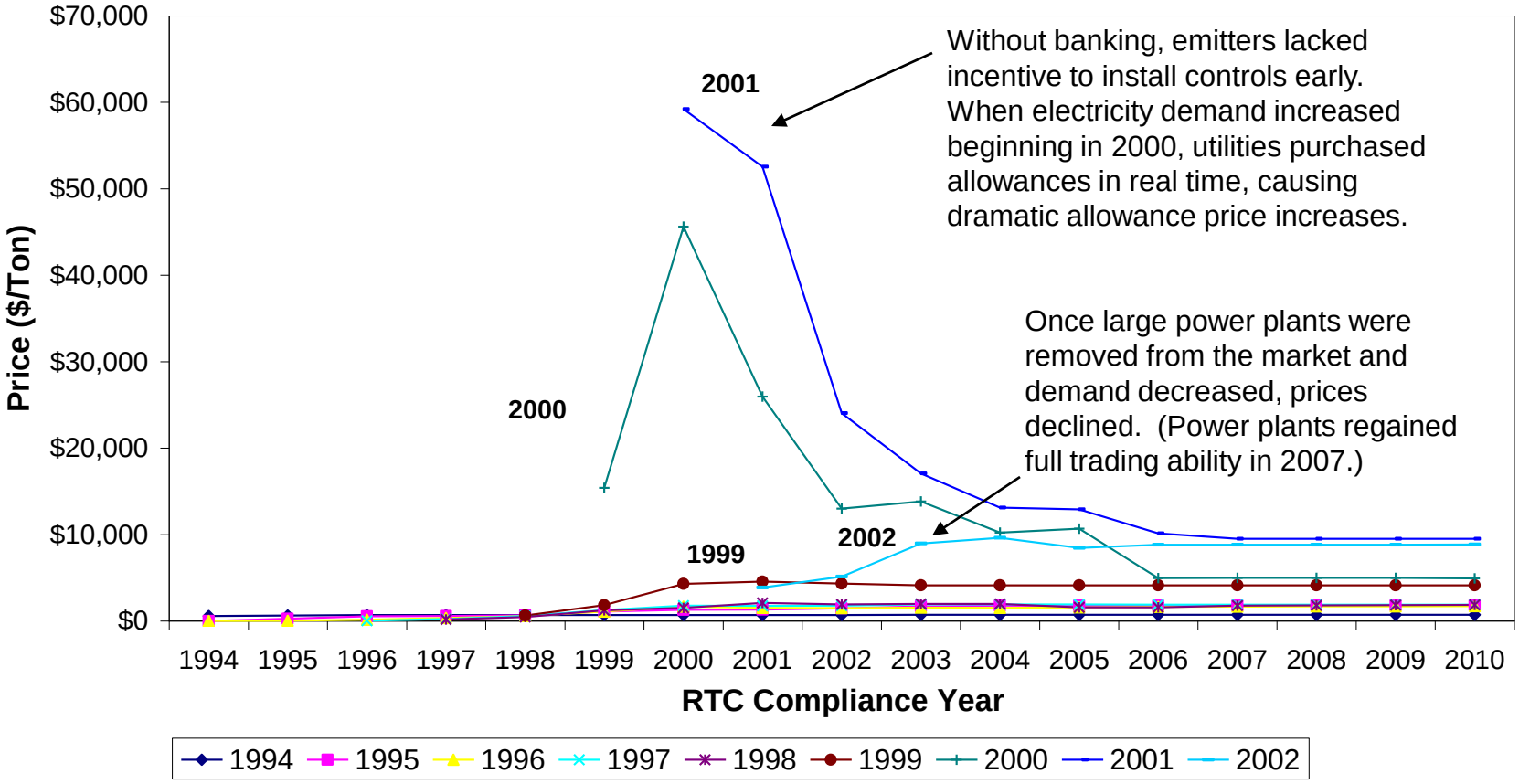
Source: Evolution Markets (http://new.evomarkets.com)

NO_X Budget Ozone Season Spot Settle Price



Source: Evolution Markets (http://new.evomarkets.com)

RECLAIM NO_X Prices, 1994–2002



Source: South Coast Air Quality Management District

The Treatment Depends on the Cause

- If *fundamentals* are the cause, the best treatment is probably no treatment: increased prices bring increased abatement and investment incentives. (If, however, essential technologies are unavailable or costs unpredictable, the program may be premature.)
- *Information* needs should be addressed upfront – in the legislation and regulation.
- *Market design* problems
  - May be addressed by revisions in the rules in most cases, through an expedited process if needed
  - Need to be addressed carefully so market is not inadvertently disrupted
- *Market abuse and manipulation* should be distinguished from broad concerns over harmful program impacts
  - In some areas, these issues should be addressed naturally by existing laws and institutions, such as CFTC regulation of futures.
  - New regulations, if needed, can be made consistent with regulations for related products, for example, reference to SEC procedures by the FERC in order to address manipulation of natural gas markets.
  - Existing institutions – CFTC, FERC, SEC – have experience in developing similar oversight and enforcement processes, so a new institution may not be needed.

Classifying and Regulating GHG Allowances

- For regulatory purposes, it seems natural to start by asking whether a GHG allowance should be viewed as a currency, commodity or a security.
- But no single analogy fits very well, since GHG allowances have similarities to each:
  - Like a currency, since the supply is government regulated, it has broad economic effects, can (potentially) be traded internationally; or
  - Like a commodity, since it is linked to uniform physical product(s), and can be traded in standard units; or
  - Like a security, since it is easily tradable without transport or storage, and without the need for derivatives.
- Moreover, simply assigning a physical or financial product to one of these categories will not determine whether or how it should be regulated. For example:
  - Natural gas is a commodity, but securities regulation has formed the basis for recent regulatory treatment of market manipulation in natural gas.
- The key question is therefore not which category we place an allowance in, but what problems we need to solve, based on expected market conditions and concerns, and how elements of existing regulation can be combined to address these problems.