



# PROMOTING RENEWABLE ENERGY DEVELOPMENT

## *AN INTRODUCTORY WORKSHOP FOR ENERGY REGULATORS*

### *THE RENEWABLE TARGET PRESENTATION*

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*THE OPINIONS IN THIS PRESENTATION ARE THOSE OF THE AUTHOR NOT THE OPINION OF THE PUBLIC UTILITIES COMMISSION OF CALIFORNIA*



# PRESENTATION OUTLINE

- ◆ QUOTA SYSTEM [AKA RENEWABLE PORTFOLIO STANDARDS]
- ◆ GREEN CREDITS/CERTIFICATES/RECs
- ◆ IMPLICATIONS AND PRACTICAL APPLICATIONS FOR THE AFRICAN REGULATORY CONTEXT
- ◆ AFRICA'S CHALLENGES AND THE WAY FORWARD - A PLATFORM FOR NASCENT REGULATORY INSTITUTIONS



# QUOTA SYSTEM [RPS]

- ◆ RENEWABLE ENERGY TARGETS-DEFINITION
- ◆ DESIGN - WHY AND HOW ARE TARGETS SET ?
- ◆ APPLICATION - MANDATE AND ELIGIBILITY
- ◆ IMPLEMENTATION - THE REGULATOR'S ROLES
- ◆ PENALTIES AND OTHER ISSUES



# QUOTA SYSTEM

## ❖ RENEWABLE ENERGY TARGETS-DEFINITION

- ❖ The Quota System refers to a program for developing renewables that sets a target for how much of a system's supply of electricity must come from renewable energy. Page 40 highlights the fact that "the market is then allowed to set the price."
- ❖ This is a key factor in our discussion of the quota system as it forms the basis for a recurrent theme of my presentation in this workshop - PLANNING
- ❖ The fact that a market is allowed to set the price also forms the basis for most of the design elements of the Quota System - Guaranty of Cost Recovery, Strong Regulatory Oversight and Flexibility



# QUOTA SYSTEM [CONTINUED]

## ◆ DESIGN - WHY ARE TARGETS SET ?

- ◆ Reasons for developing renewables do not often justify the high cost of renewable energy projects - e.g. While reducing fossil fuel may be a great social objective, no business will invest money in a social program if it does not also help its bottom line.
- ◆ Similarly, most businesses do not operate on a model that expects to recoup their cost of investment over the ten to twenty year life of a an average renewable project
- ◆ Even a government has to raise money in the nature of taxes for fund social programs.
- ◆ **Mandate:** Therefore, there is a need for a mandate to make the industry do what it would not otherwise do by itself, develop some of these costly projects.



# QUOTA SYSTEM [CONTINUED]

## ◆ DESIGN - HOW ARE TARGETS SET I?

- ◆ THE QUESTION: How can I make a market in a free economy invest in a program it would not ordinarily invest in because of costs and what amount of such investments can I force on the market?
- ◆ THE ANSWER : **SHOW ME THE MONEY** - You make a market invest in a program it would not ordinarily invest in by showing the market the money.
- ◆ REMEMBER, THE TARGET IS IMPOSED ON THE BUYER NOT THE SELLER - A Renewable Energy Target essentially tells the energy distributor that it must ensure that 20% of the retail energy distributed on its system comes from renewable energy resource.
- ◆ FINANCING: Once the buyer-distributor let's the market know that it is planning to buy 20% of its energy distributed from renewable resources, the seller will say I need a binding contract from you to convince the banks to give me a loan; the banks will say the only realistic contract has to be a long-term contract considering the tariff regulators have placed on the distributor



# QUOTA SYSTEM [CONTINUED]

## ◆ DESIGN - HOW ARE TARGETS SET I [CONTD.] ?

- ◆ GUARANTY OF COST RECOVERY - So one way targets are set is to guaranty the market that it would recover its costs and the elements for doing that are:
  - ◆ A LONG-TERM OUTLOOK - With long-term contracts - See PAGE 2 OF THE HANDBOOK
  - ◆ A STRONG REGULATOR - A strong regulator is not one that the government has given a big ax to cut down any entity that does not agree, but one the market can trust for the life of this program - SEE PAGE 5 OF THE HANDBOOK
- ◆ FLEXIBILITY : The right RPS design must also have the flexibility to address changes in the markets, and the industry - technology, unanticipated development issues - e.g. the California program authorized the use of RECs but left it to the Regulator to decide when and how to allowing RECs - more on that later



# QUOTA SYSTEM [CONTINUED]

## ◆ DESIGN - HOW ARE TARGETS DETERMINED?

### ◆ LOGICAL ANSWER:

- ◆ POLICIES AND POLITICIANS: Legislators try to determine the amount of the target based partly on the goals they wish to achieve, e.g.: reducing emissions, development of new energy infrastructure health benefits, green jobs, attracting businesses, a green record attractive to their constituencies.
- ◆ THE MARKET: The greater influence on how the target is met may well be what the market can take? If you reach for the highest the market can deliver, you are doing the most you can for your goals.
- ◆ ARBITRARY: In California, the target changed twice in three years and is undergoing another change as we speak. **However it is determined, there must be a systematic plan to achieve it and a clear understanding of its costs and benefits.**



# APPLICATION

## ◆ MANDATE AND ELIGIBILITY

- ◆ **ANNUAL PROCUREMENT TARGETS** - The mandate includes a requirement for annual procurement targets; A target to be met in 10 to 20 years cannot be realistic if it doesn't also include incremental requirements.

- ◆ **PENALTIES:** The mandates also authorizes the imposition of penalties should businesses fail to comply

- ◆ **VERIFICATION OF ELIGIBILITY** - In order for the resources from a project to count towards the target, some entity must verify that the energy delivered has the required attributes of a renewable resource.

- ◆ **IN CALIFORNIA** - The entity that developed the implementation regulations, established the penalty scheme, and evaluates the progress is not the same entity that certifies projects' eligibility



# IMPLEMENTATION

## ◆ THE REGULATOR'S ROLE

- ◆ **A CLEAR REGULATION** - “Regulations must be developed in support of the scheme selected, requiring cohesion of decision-making. Lack of certainty as to the applicable scheme or the failure to make a choice and commit to the choice will impair the success of RE. For growth to take place, selection and certainty are required.” HANDBOOK AT PAGE 5 **[THIS CANNOT BE OVER-EMPHASIZED]**
- ◆ IN CALIFORNIA, THE STATUTE GAVE THE COMMISSION SIX MONTHS FROM THE EFFECTIVE DATE TO COME UP WITH A DECISION FOR IMPLEMENTING IT;
- ◆ DIRECTIONS TO THE MARKET ON DETERMINING PRICE - OF LONG-TERM CONTRACT FOR ENERGY



# IMPLEMENTATION [CONT'D]

## ◆ THE REGULATOR'S ROLE

- ◆ STANDARDIZATION
- ◆ ANNUAL COMPLIANCE REPORTS AND REVIEW
- ◆ RENEWABLE PROJECT PLANS AND REVIEW
- ◆ A RESPONSIVE PROCES FOR APPLICATIONS TO, AND HEARINGS BEFORE, THE COMMISSION TO ADDRESS CHANGE AND ENSURE FLEXIBILITY



# PENALTIES & OTHERS

## ◆ REGULATOR ESTABLISHES THE AMOUNT OF PENALTIES

- ◆ SUFFICIENT TO DISCOURAGE NON-COMPLIANCE
- ◆ BUT NOT TOO PUNITIVE TO ENCOURAGE CREATIVE ACCOUNTING AND CIRCUMVENTION
- ◆ PENALTIES SHOULD BE ESTABLISHED IN CONSULTATION WITH STAKEHOLDERS WHO WOULD PAY THEM - IN CALIFORNIA STAKEHOLDERS WERE INVITED TO PROPOSE THE AMOUNT OF THE PENALTY AND WHY

## ◆ OTHERS

- ◆ LOBBYING OPPOSITION AND POLITICAL INTERVENTION
- ◆ ACTS OF GOD AND OTHER UNANTICIPATED CHANGES



# GREEN CREDITS

- ◆ GREEN CREDITS / RENEWABLE ENERGY CERTIFICATES
- ◆ DESIGN - TRACKING AND MONITORING
- ◆ UNBUNDLING - TRADABLE OR NON-TRADABLE
- ◆ IMPLICATIONS FOR AND CONSISTENCY WITH THE QUOTA SYSTEM



# GREEN CREDITS

## ◆ CONCEPT

- ◆ A RENEWABLE ENERGY GENERATOR DOES TWO THINGS: (1) GENERATES ELECTRICITY AND (2) PROVIDES ENVIRONMENTAL BENEFITS BY DISPLACING DIRTY FOSSIL FUELS THAT WOULD OTHERWISE PRODUCE THAT ELECTRICITY
- ◆ GREEN CREDITS REFER TO THE ENVIRONMENTAL BENEFITS OR ATTRIBUTES OF THE ELECTRICITY GENERATED BY THE RENEWABLE RESOURCE GENERATOR

## ◆ CERTIFICATES

- ◆ CERTIFICATES USED TO REPRESENT THE AMOUNT OF RENEWABLE ENERGY GENERATED ARE KNOWN AS RENEWABLE ENERGY CREDITS
- ◆ IT IS MEASURED AS A UNIT OF THE AMOUNT OF ENERGY GENERATED
- ◆ PROOF OF GENERATION: BECAUSE THEY PROOF GENERATION, THEY CAN ALSO BE USED FOR ACCOUNTING AND COMPLIANCE PURPOSES ONLY



# UNBUNDLING CERTIFICATES

## ◆ BUNDLED RENEWABLE ENERGY

- ◆ WHEN THE BUYER OF THE RENEWABLE RESOURCE TAKES BOTH THE ENERGY DELIVERED AND GETS THE CREDIT FOR THE RENEWABLE ATTRIBUTES

## ◆ UNBUNDLED RENEWABLE ENERGY

- ◆ WHEN THE RENEWABLE ENERGY ATTRIBUTES CAN BE SOLD SEPARATELY FROM THE ENERGY DELIVERED BY THE RESOURCE

## ◆ TRADABLE RENEWABLE ENERGY CREDITS

- ◆ WHEN RENEWABLE ENERGY IS UNBUNDLED THE CERTIFICATES CAN BE TRADED SEPARATELY BUT THEY DON'T NECESSARILY HAVE TO BE TRADED
- ◆ SOME JURISDICTIONS DO NOT ALLOW CERTIFICATES TO BE TRADED EVEN THOUGH THEY ALLOW THEM TO BE UNBUNDLED AND EXCHANGED



# T-RECs & QUOTA SYSTEM

## ◆ ADVANTAGES OF TRADING RECS FOR THE QUOTA SYSTEM

- ◆ AVOIDS INTEGRATION & TRANSMISSION BARRIERS
- ◆ A SOURCE OF REVENUE
- ◆ FLEXIBILITY OF COMPLIANCE - EASE OF ACQUISITION

## ◆ DISADVANTAGES OF TRADING RECs FOR THE QUOTA SYSTEM

- ◆ POTENTIAL FOR MANIPULATION
- ◆ UNDERMINES LOCAL GENERATION AND JOBS
- ◆ MAY DISCOURAGE LONG-TERM CONTRACTING NECESSARY FOR FINANCING



# THE AFRICAN CONTEXT

## ◆ IMPLICATIONS AND PRACTICAL APPLICATIONS OF THE QUOTA SYSTEM IN AFRICA

- ◆ **POLICY REASONS:** African Regulators should tailor the policy reasons from abroad to their own local needs and devise some of their own reasons for a message that resonates more with their politicians and locals -
- ◆ **HOW TO DETERMINE THE QUOTA:** [BE CREATIVE] Try imposing a target on the large energy users, often times they have their own off-grid generators to back up system power failures so it is not illogical. BUT DO A STUDY FIRST AND HAVE A MESSAGE
- ◆ **FIND THE MONEY FOR IMPLEMENTATION IN THE PRIVATE SECTOR:** once you find the money or source to charge in the private sector the law will follow



# IMPLICATIONS AND PRACTICAL

## APPLICATIONS QUOTA SYSTEM IN AFRICA

Continued

- ◆ DESIGN - SMALL SCALE TEST CASES
- ◆ PLAN AND DEVELOP AN EFFECTIVE MANDATE IN-HOUSE
- ◆ COST ASSESSMENT - HOW TO PAY FOR RENEWABLE
  - ◆ Africa must start planning for who will pay for new infrastructure besides governments funding and grants
- ◆ COMMUNICATION



# THE WAY FORWARD

- ◆ CHALLENGES FOR THE AFRICAN REGULATOR AND THE WAY FORWARD
  - ◆ THE MESSAGE - GETTING IT RIGHT
  - ◆ CREDIBILITY FOR A NASCENT REGULATOR
    - ◆ USING RENEWABLE ENERGY DEVELOPMENT TO DEVELOP CREDIBILITY FOR THE INSTITUTION
  - ◆ THE OUTLOOK - LONG-TERM AND COMPREHENSIVE