Marin County Renewable Energy Strategy

MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY

Seeking a 50% Renewable Energy Mix within 5 Years

Marin Contacts

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Program Background

MARIN COUNTY'S CCA INVESTIGATION

- **The County began investigating of Community Choice Aggregation ("CCA") in 2004**
  - Pilot sponsored by the California Energy Commission and the U.S. Dept. of Energy
  - Navigant Consulting retained to conduct Phase I study
- **The County and 11 other Phase I project participants**
  - Established the goal of significantly increasing renewable resources
  - Marin establishes goal of obtaining 50% renewables in 5 years
- **Phase I Study conclusions**
  - Marin could reduce fossil fuels and increase renewables on an economic basis
  - Little impact on electricity rates
  - Moving from 20% to 51% renewables has very slight 1% to 2% impact on costs
- **Since Phase I study completion conventional power prices have doubled**
  - Current prices for energy reflect a general convergence in conventional/renewable costs
  - Start of Phase II Project Plan

Program Objective

PHASE II: DRAFT BUSINESS PLAN OBJECTIVES

- **Marin County would form a new Joint Powers Agency in early 2008**
  - The [Marin Power Authority] ("Authority") would form a CCA and offer services in 2009
  - The Authority's policy is to maintain rates that are less than or equal to PG&E
- **The Authority would:**
  - Negotiate contracts with third party electric suppliers
  - Provide electricity to customers and technical services required for the program.
  - Increase renewable energy procurement to more than half of its electric supply
  - Pursue the long-term goal of 100% renewable energy supply beyond 2013
  - Develop or obtain entitlements for up to 125 MW of new renewable generation by 2013
  - Leverage existing state and federal incentives to achieve at least 14 MW of solar by 2017.
  - Promote additional energy efficiency efforts and programs as envisioned by AB 117.
- **The proposed CCA Program would cause a reduction in greenhouse gas emissions**
  - Target reduction of between 174,000 and 308,000 metric tons per year by 2017
  - Exceed this goal beyond 2017 by moving to 100% renewable resources

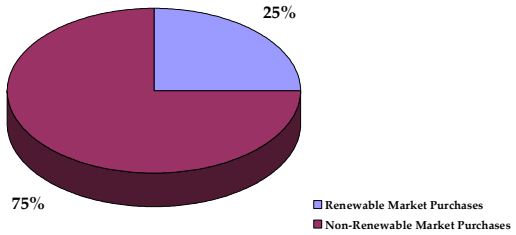
Program Objective

CURRENT & PROJECTED ENERGY USE IN MARIN

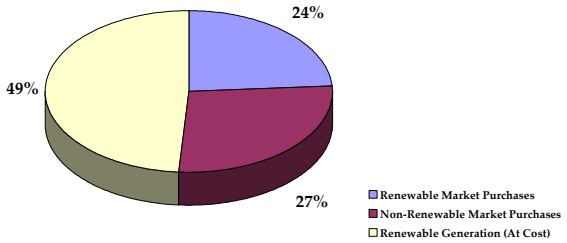
Marin Power Authority
Energy Balance
(GWH)
2009 to 2018

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Marin Demand (GWh)										
Retail Demand	-278	-1,290	-1,309	-1,329	-1,349	-1,369	-1,390	-1,411	-1,432	-1,453
Distributed Generation	6	8	10	12	14	16	18	19	21	21
Energy Efficiency	0	2	5	6	6	6	7	7	7	7
Losses and UFE	-19	-90	-91	-92	-93	-94	-96	-97	-98	-100
Total Demand	-291	-1,370	-1,385	-1,402	-1,421	-1,441	-1,460	-1,482	-1,503	-1,526
Marin Supply (GWh)										
Renewable Resources										
Generation	0	0	0	0	322	322	322	322	322	322
Power Purchase Contracts	68	320	324	328	355	365	374	385	394	405
Total Renewable Resources	68	320	324	328	677	687	696	706	716	727
Conventional Resources										
Generation	0	0	0	0	0	0	0	0	0	0
Power Purchase Contracts	223	1,050	1,061	1,075	744	754	764	776	786	798
Total Conventional Resources	223	1,050	1,061	1,075	744	754	764	776	786	798
Total Supply	291	1,370	1,385	1,402	1,421	1,441	1,460	1,482	1,503	1,526
Energy Open Position (GWh)	0	0	0	0	0	0	0	0	0	0

Marin Power Authority 2010 Resource Mix



Marin Power Authority 2017 Resource Mix



Renewable & Conventional Energy Options

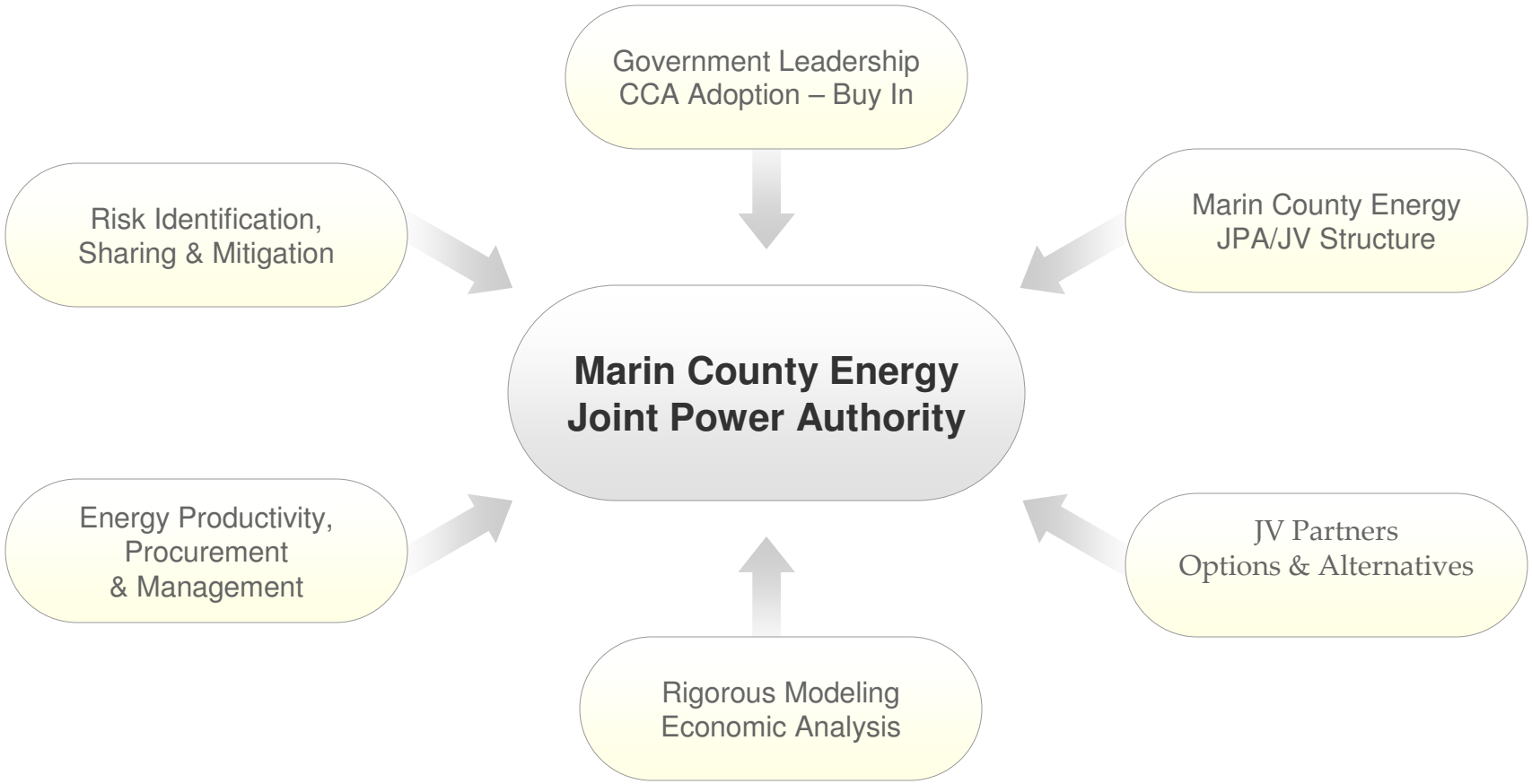
125 MW OF RENEWABLE & CONVENTIONAL ENERGY OPTIONS UNDER EVALAUTION

LAND FILL & DIGESTER GAS	Target Marin land fill gas in the range of 8-12 MW
BIO MASS – MUNI SOLID WASTE	Target Marin Biomass 5-10 MW, External Biomass 25 MW
WIND	Target Marin Wind 20 MW, External Wind 10 -75 MW
SOLAR –THERMAL- PHOTOVOLTAIC	Target Marin Solar 15 MW, External Solar 25 MW
GEO THERMAL	Target External Geothermal Base Load 75 Mw
RENEWABLE ENERGY CERTIFICATES	Use of REC's to balance other resource availability and create flexibility
BIODIESEL-CLEAN FUEL CELLS	Target Marin 2.5 MW equivalent Biodiesel, Fuel Cells Using Renewable Fuels
CONVENTIONAL RESOURCES	125 MW of Conventional Base Loan Combined Cycle Natural Gas fired Power

SEEKING STABLE BASE AND PEKAING CAPACITY AT COMPETAITIVE PRICES

Business Plan

KEY ENERGY PROGRAM DESIGN ELEMENTS



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PREDICATED ON COMMUNITY CHOICE AGGREGATION

APPROACH TO ENERGY PROCUREMENT

Energy Productivity TBD

Combined Cycle Gas
Clean Coal
Nuclear
Large Hydroelectric

…

Conservation Gain XX MW
Efficiency Gain XX MW
Demand Management Gain XX MW

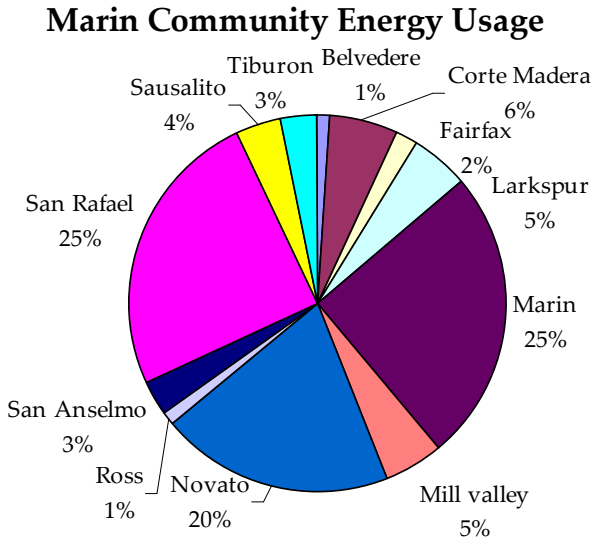
…

Wind
Solar
Bio Mass
Land Fill Gas
Geothermal
Run of River Hydro
REC's

Business Plan

GOVERNMENT LEADERSHIP CCA ADOPTION & BUY IN

- **Marin's program is dependent on confirming JPA participation from at least 50% of Marin's energy usage:**
  - The largest users San Rafael, Novato and the County are most critical.
  - 2008 timing for resolving participation
- **Political Process**
  - Oct.-Dec. 2007: Refine draft Business Plan and proposed governance structure
  - Jan.-Mar. 2008: Cities and County make decision on CCA participation
- **Key Issues**
  - Risk management to avoid political risk
  - JPA governance structure and policy framework



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GOVERNMENT LEADERSHIP CCA ADOPTION & BUY IN

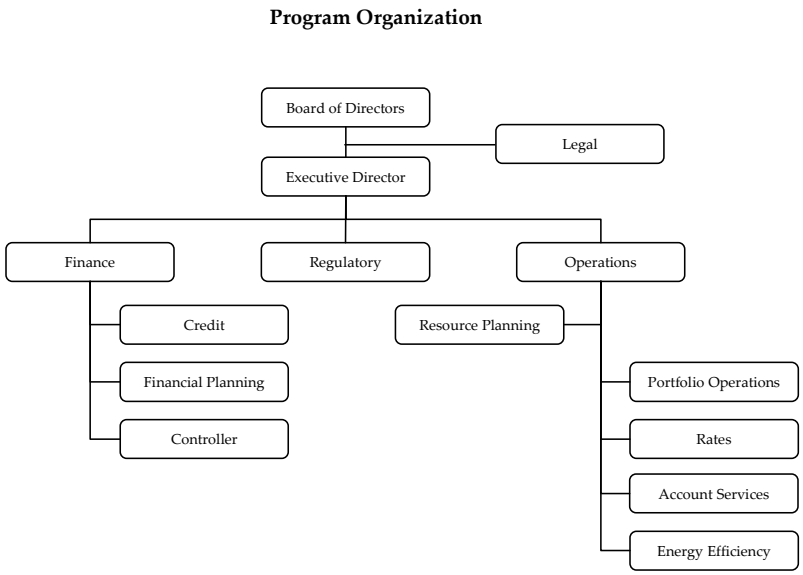
CCA Program Components (Implementation Plan Requirements)

- **Requirements of AB 117, which state that all CCA Programs must, at a minimum, address the following:**
  - Organizational structure of the program, its operations, and funding;
  - Rate setting and other costs to participants;
  - Disclosure and due process in setting rates and allocating costs among participants;
  - Methods for entering and terminating agreements with other entities;
  - The rights and responsibilities of program participants
  - Description of the third parties that will be supplying electricity under the program, including
- **AB 117 added Section 366.2 (c)(3) to the California Public Utilities Code requiring that an Implementation Plan provide for:**
  - Universal access
  - Reliability
  - Equitable treatment of all classes of customers
  - Any requirements established by state law or by the CPUC concerning aggregation services.

Business Plan

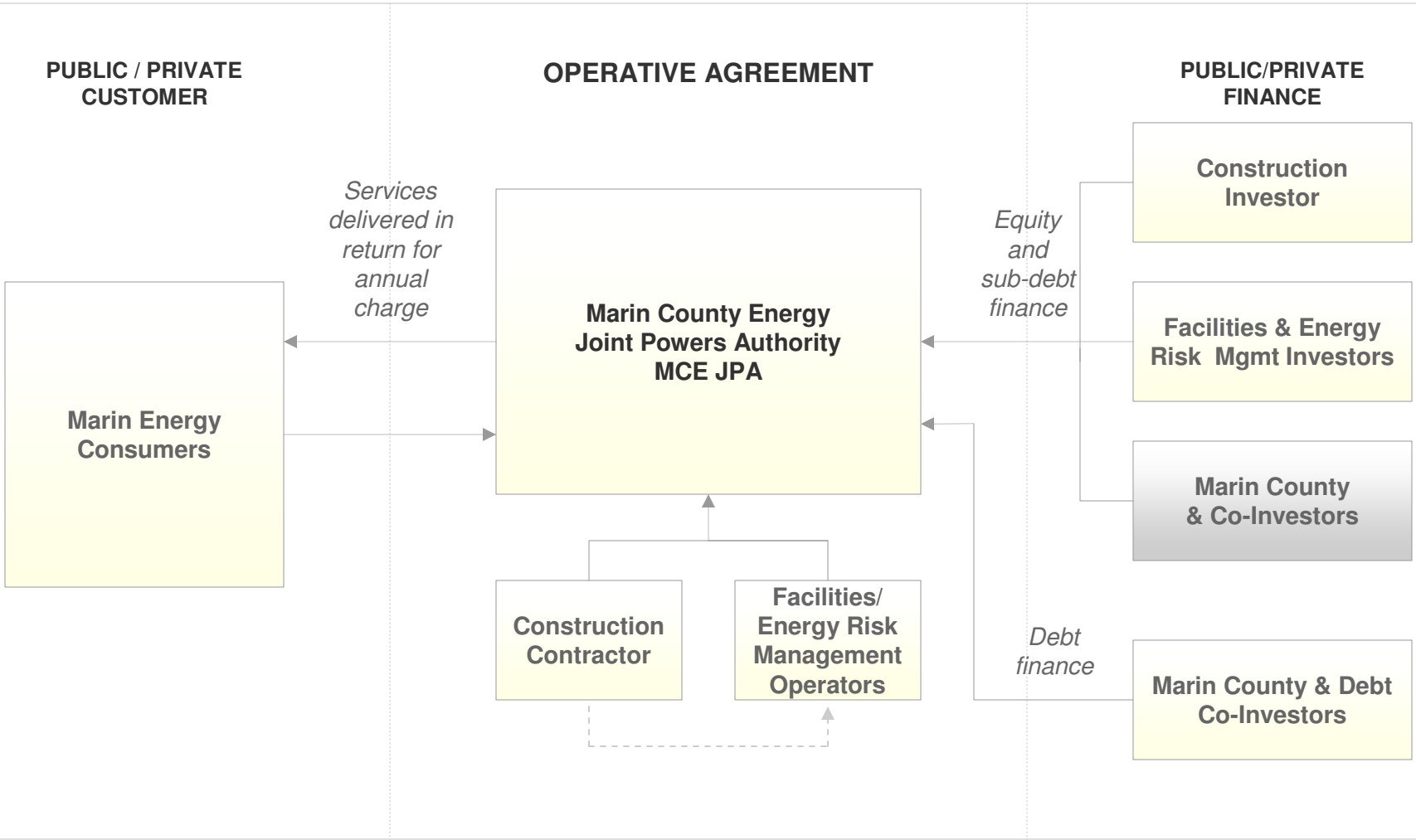
PROPOSED MARIN COUNTY ENERGY JPA/JOINT VENTURE STRUCTURE

- **The Authority would have a Board of Directors**
  - Consisting of one representative from each of the member
  - Elected officials from the Board of Supervisors
  - City Councils of the eleven member cities
- **The Board would meet at regular intervals**
  - Providing overall management and guidance to the Authority
  - Public board meetings held in accordance with the Brown Act



Business Plan

MARIN COUNTY ENERGY PRO FORMA JPA/JOINT VENTURE STRUCTURE



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MCE JPA JOINT VENTURE PARTNERS OPTIONS & ALTERNATIVES

» **Evaluation of Alternative Partnering Strategies**

- Joint Venture mix of partners and service providers will revolve around key partners
- Central to this mix will be the Energy Procurement & Management Partner
- There are 3 sectors in the market that provide this service

FINANCIAL SERVICES	STRATEGIC IPP	IOU/ MUNI / JPA
J. Aron Goldman Sachs	Mirant California	Northern California Power Agency
Morgan Stanley	Florida Power & Light	Sacramento Municipal Utility District
Citi Group	Constellation Energy	Sonoma County Water Agency
UBS	AES	Modesto Irrigation District
XXX	XXX	PG&E

Business Plan

ONGOING RIGOROUS MODELING & ECONOMIC ANALYSIS

Marin Power Authority
Comparison of Electric Rates – Authority versus distribution utility

CATEGORY	2009	2010	2011
Authority's Electric Rate ($/MWh)	$101.81	$89.60	$91.39
IOU Electric Rate ($/MWh)	$101.81	$90.48	$93.20
Variance ($/MWh)	$0.00	$0.88	$1.80
Variance (%)	0.0%	1.0%	1.9%

Business Plan

ENERGY PROCUREMENT, PRODUCTIVITY & MANAGEMENT

- **The objectives outlined in the Business Plan would accomplish the following by 2018:**
  - Procure renewable energy through a full-requirements contract with an experienced, financially stable energy supplier that will meet 25% of the Authority's initial energy needs.
  - Remaining energy requirement will be supplied from efficient, low emission conventional generating resources.
  - Increase renewable energy supplies to achieve 51% renewable supply by 2013.
  - Develop partnership(s) with experienced public power developer(s) to facilitate development of Program-owned/controlled renewable generating capacity.
  - Invest in 125 MW of new renewable generating capacity to be online by 2013.
  - Achieve incremental reductions in greenhouse gas emissions ranging from 174,000 to 308,000 tons per year.

Business Plan

ENERGY PRODUCTIVITY, PROCUREMENT & MANAGEMENT

ENERGY PRODUCTIVITY

- **Conservation Programs**
  - 1-2 MW's
- **Efficiency Gains**
  - 2-4 MW's
- **Demand Management**
  - 4-6 MW's
- **Incentives**
  - ??
- **Productivity Measures**
  - ??

PROCUREMENT

- **Procurement Strategy**
  - Renewable plan
  - Conventional plan
  - Assets owned/contracted
- **Timing**
  - 2008 Start-Up
  - 2009 10% Renewable
  - 2010 20% Renewable
- **Contractual Structure**
  - Payment & Performance
  - Availability
  - Performance
  - Deductions
  - Unavailability
  - Capture Residual
- **JV Incentives**

MANAGMENT

- **Key Partner Selection**
  - Best partnering model
  - Qualifications
  - Strengths and weaknesses
- **Partner Contracts**
  - Scope
  - Duration
  - Compensation
  - Liquidated Damages
- **Contractual Structure**
  - XXX
- **Alignment of Interests**
  - Compensation
  - Incentives
- **Management Plan**

Business Plan

PROCUREMENT STRATEGY PRE COMPLETION

» **MCE JPA Procurement Process**

- MCE project/procurement plan
- **Procurement 1 & 2:** identify Energy Management JV Partner in MCE JPA
- Establish buy vs. build mix and timing
- 100% renewables = 100% buy as opposed to build over time
- Clearly delineate inside Marin vs. out of County solutions
- Resolve conventional bid solicitation
- **Procurement 3:** Initiate multiple Design, Build, Finance, Operate ("DBFO") bid solicitations for MCE JPA owned renewable resources

Typical Procurement Process
1, 2, 3

1. **Project Plan(s)**
2. **Prior Information Notice**
3. **Contract Notice**
4. **Pre-qualification**
5. **Short-list candidates (typically 3)**
6. **Issue Invitation to Negotiate (ITN)**
7. **Negotiations and clarifications**
8. **Select preferred bidder(s)**
9. **Financial Close**

Business Plan

PROCUREMENT STRATEGY DBF vs. O Phase OF DEVELOPMENT

- Clear Distinction Pre & Post Completion
- DBF vs. O Phase of Development
- JV Partner likely to exit or at least modify role post completion
- 5-10 Year time frame
- Project is de risked and enters stable operating phase

Business Plan

RISK IDENTIFICATION SHARING & MITIGATION

- **Risk Transfer – Risk Sharing**
  - Procurement Risk
  - Price Risk
  - Technical Risk
  - Construction Risk
  - Operating Risk
  - Revenue Risk
  - Financial Risk
  - Regulatory/Political Risk
  - Asset Risk
  - Other Risks to be identified

Risk Matrix
Contract Negotiations

Procurement 1 & 2
Key MCE JPA JV Partner
Conventional Energy Provider

Procurement 3
MCE JPA Owned Renewables

Business Plan

RISK IDENTIFICATION SHARING & MITIGATION

Risk Matrix
MCE JPA Contract Negotiations
Key MEC JPA Partner

MCE JPA Partner

Type of Risk	Source of Risk	Risk Taken By
Enterprise Management	Definition Roles & Responsibilities	MCE-JPA, JV Partner
Procurment Process	P2 vs. P3	Shared
Staffing	Human Resources	MCE-JPA, JV Partner

Business Plan

RISK IDENTIFICATION SHARING & MITIGATION

Risk Matrix
MCE JPA Contract Negotiations
Conventional Procurement

Conventional Procurment

Type of Risk	Source of Risk	Risk Taken By
Price	Change in Commdity Prices	Energy provider
Delivery	Location - Basis Risk	Energy provider
Margin Calls	VAR Price Volatility	Energy provider MCE-JPA
Forece Majure	Various	MCE JPA - Energy Provider
Provider Credit Risk	Energy Provider	MCE-JPA
Tranmission Risk	PG&E	PG&E?
Customer Credit Risk	Consumers	MCE-JPA

Business Plan

RISK IDENTIFICATION SHARING & MITIGATION

Risk Matrix
MCE JPA Contract Negotiations
DBFO Procurement

DBFO Procurement

Type of Risk	Source of Risk	Risk Taken By
Site Conditions	Ground Conditions	Construction Contractor
Site Preparation	Site redemption, tenure, pollution/discharge, obtaining permits, Community liasion	Project and operating company
	Pre-existing liability	?
Land Use	Native title, cultural heritage	?
Technical Risk	Fault in tender documents	MCE-JPA
	Contrctor design fault	Contractor

Business Plan

RISK IDENTIFICATION SHARING & MITIGATION

Risk Matrix
MCE JPA Contract Negotiations
DBFO Procurement

Type of Risk	Source of Risk	Risk Taken By
Cost Over run	Inefficient work practices and wastage of materials	Contractor
	Changes in law, delays in approvals etc.	MCE-JPA
Delay to completion	lack of co-ordination of contractors, failure to obtain detailed planning approvals	Contractor

Business Plan

RISK IDENTIFICATION SHARING & MITIGATION

Risk Matrix
MCE JPA Contract Negotiations
DBFO Procurement

Type of Risk	Source of Risk	Risk Taken By
Failure to meet performance criteria	Quality shortfall/defects in construction and comissioning	Contractor
Operating cost overrun	Project company request for change in practice	MCE-JPA
	Industrial relations, repairs, occupational health & safety, mainenance, other costs	Operator

Business Plan

RISK IDENTIFICATION SHARING & MITIGATION

Risk Matrix
MCE JPA Contract Negotiations
DBFO Procurement

Type of Risk	Source of Risk	Risk Taken By
Delay to interruption in operation	Operator default	Operator
	Government delay in granting or renewing approvals providing contractual inputs	MCE-JPA
Shortfall in service quality	Operator fault	Operator

Business Plan

RISK IDENTIFICATION SHARING & MITIGATION

Risk Matrix
MCE JPA Contract Negotiations
DBFO Procurement

Type of Risk	Source of Risk	Risk Taken By
Increase in input prices	Contractual violations by Government-owned support network	Trust
	Contactual viloations by private sector	MCE-JPA
Changes in taxes and tarriffs	Fall in revenue	Shared

Business Plan

RISK IDENTIFICATION SHARING & MITIGATION

Risk Matrix
MCE JPA Contract Negotiations
DBFO Procurement

Type of Risk	Source of Risk	Risk Taken By
Demand for output	Decreased demand	MCE-JPA
Interest rates	Flucations in with insufficient hedging	MCE-JPA
Inflation	Payments eroded by inflation	MCE-JPA
Changes in law	Construction period	Shared
	Operating period	

Business Plan

RISK IDENTIFICATION SHARING & MITIGATION

Risk Matrix
MCE JPA Contract Negotiations
DBFO Procurement

Type of Risk	Source of Risk	Risk Taken By
Political Interfernece	Breach/cancellation of licence	MCE-JPA
	Expropriation	Insure/Project
	Failure to renew approvals, discriminatory, import restrictions	MCE-JPA

Business Plan

TIMELINE FOR IMPLEMENTATION

Timeline For Implementation

ACTIVITY	TIMELINE
Review of Draft Business Plan	October 2007
Complete Business Plan	December 2007
Complete JPA Agreement, Program Agreement and Implementation Plan	February-March 2008
Public Workshops	March 2008
Participant Approval Process (JPA and Ordinance)	Early April 2008
Commencement of the Authority	April 2008
File Implementation Plan with CPUC	Early May 2008
Issue Supplier Request for Bids and Select Supplier	May-June 2008
Final Evaluation upon CPUC Certification of filed Implementation Plan	June 2008
Final Go/No Go Decision	June 2008
File Registration Package with CPUC	Early July 2008
Execute Supplier/Vendor Contracts	July-August 2008
Resolve Outstanding Issues	August-October 2008
Staffing and Startup Activities	October-December 2008
Finalize Initial Rates	October 2008
60 Day Notice	Early November 2008
Go live phase 1	January 2009

Summary

DESIRED OUTCOMES, VALUE FOR MONEY

- **Government is motivated to reduce costs and improve the environment**
  - Energy productivity and conservation
  - 50% renewables and beyond
  - Attainment of conservation and environmental objectives
- **Government purchases a service with guaranteed performance**
  - Contractual structure is consistent with appropriate governance model
  - Incorporates performance guarantees and alignment of interests
  - Procurement costs/risks equal to or better than alternatives
- **Predictability of costs, funding and risk management**
  - Contracts clearly define roles and responsibilities
  - Roles and responsibilities assigned to the parties best able to mange them
  - Economics aligned with roles and outcomes
- **Whole-of-life costing with secured residual value**
  - JV structure incorporates procurement and Design, Build, Finance and Operate elements
  - Long term 20-30 year procurement strategy