Program Management and Continuous Improvement

for Financing Programs

January 2011

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U.S. Department of Energy

Contents

Financial mechanisms within Integrated Energy Efficiency Programs

Every successful energy efficiency program depends on four functional pillars

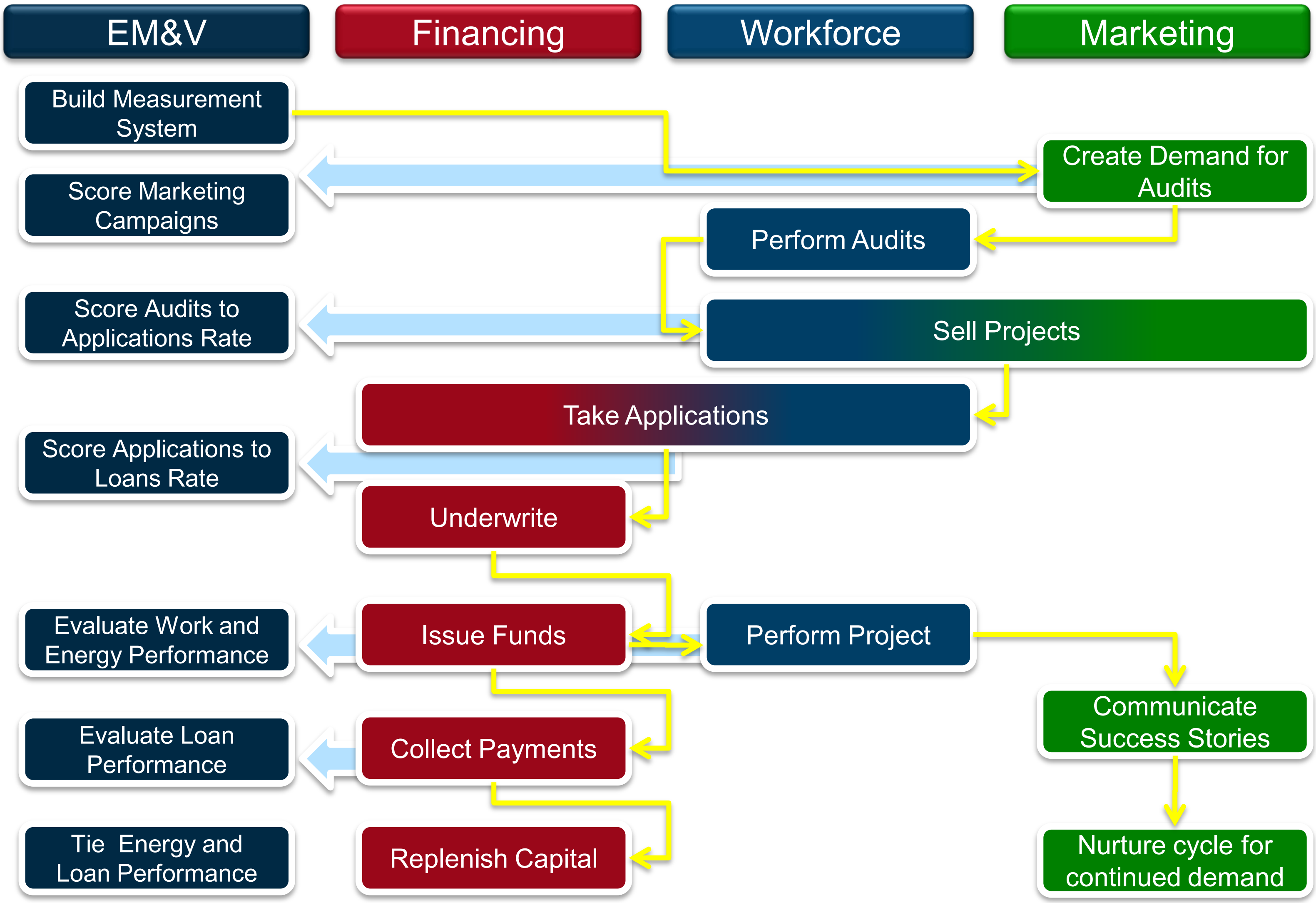
- Demand Creation
- Workforce training & certification
- EM&V, data collection, and continuous improvement
- Financing

Financing must address a broad spectrum of needs from small-dollar reactionary replacement of HVAC equipment to large-dollar, carefully planned whole-building retrofits

- No one product is effective across the entire spectrum
- Multiple complementary products maximize the effectiveness of the portfolio
- Different product serve different market segments – residential/commercial/non profit etc. and different sub-segments with each (eg. small commercial).

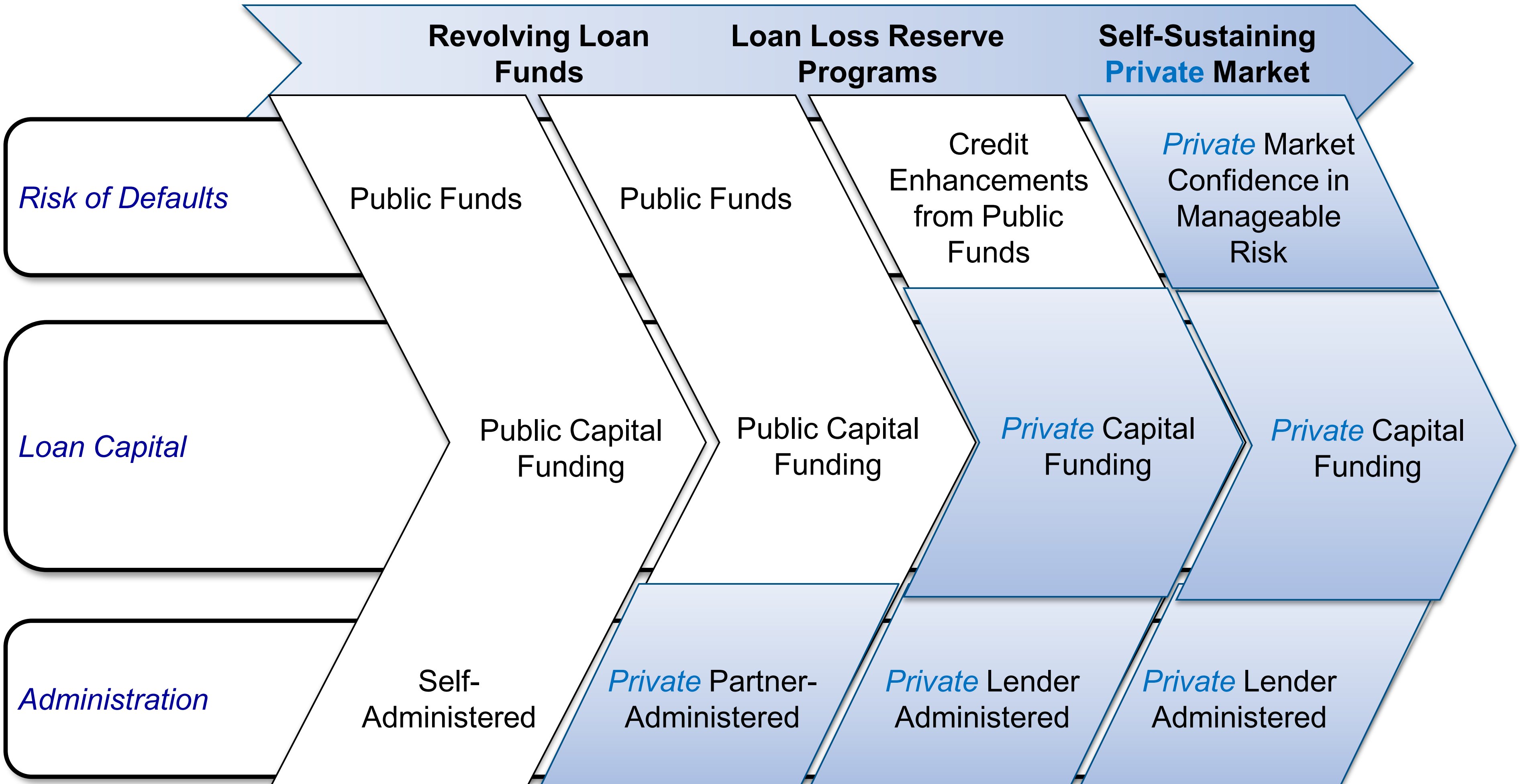
Financing programs allow payments on investments to be stretched out in time, the same way that the benefits created from the investments are accrued

A Typical Integrated Residential Energy Efficiency Program



Roadmap to a Self-Sustaining Private Market

Grantees currently are building programs at different points along the spectrum, as appropriate to their capabilities and the risk appetite of their financial partners



Private Capital to be Committed to Energy Efficiency

Over $1 Billion of private capital will go to work thanks to ARRA Programs

Total

ARRA Funds in Reserve or Capital	Private Capital	Total Loan Capital
$300 Million	**$1.1 Billion**	**$1.2 Billion**

	ARRA Funds	Private Capital	Total Loan Funds
Workshop Attendees	**$132,416,000**	**$501,950,000**	**$581,300,000**
Eagle County	$900,000	$17,000,000	$17,000,000
Boulder	$8,000,000	$40,000,000	$40,000,000
American Samoa	$500,000		$500,000
Kansas City	$5,300,000	$65,000,000	$70,000,000
Maryland	$12,400,000	$12,400,000	$24,800,000
Plano	$700,000	$7,000,000	$7,000,000
Shreveport	$500,000	$5,000,000	$5,000,000
Michigan DELEG	$16,750,000		$16,750,000
Santa Barbara	$1,000,000	$20,000,000	$20,000,000
San Diego	$1,200,000	$26,000,000	$26,000,000
Rutland	$1,600,000	$4,500,000	$4,500,000
Phoenix	$4,000,000	$16,000,000	$20,000,000
Fort Worth	$500,000		$500,000
New Orleans	$706,000	$7,000,000	$7,000,000
Arkansas	$19,000,000		$19,000,000
Missouri	$9,000,000		$9,000,000
Iowa	$8,500,000	$16,500,000	$20,500,000
Chicago	$15,750,000	$99,250,000	$99,250,000
Wisconsin	$4,210,000	$74,500,000	$74,500,000
Cincinnati	$17,000,000	$85,000,000	$88,400,000
North Carolina	$4,800,000	$4,800,000	$9,600,000
Bainbridge Island	$100,000	$2,000,000	$2,000,000
Other TA Recipients	**$164,418,000**	**$599,478,000**	**$661,728,000**
Michigan Saves	$3,000,000	$60,000,000	$60,000,000
California	$54,000,000	$250,000,000	$250,000,000
Alabama	$25,000,000	$35,000,000	$60,000,000
Camden City	$250,000	$2,500,000	$2,750,000
Connecticut	$0	$25,000,000	$25,000,000
Kitsap County	$250,000	$5,000,000	$5,000,000
Los Angeles	$2,500,000	$25,000,000	$25,000,000
New Bedford	$120,000	$2,400,000	$2,400,000
Seattle	$654,000	$4,578,000	$4,578,000
Snohomish County	$654,000	$13,080,000	$13,080,000
Southampton	$1,540,000	$4,620,000	$4,620,000
Austin	$4,000,000	$40,000,000	$40,000,000
San Antonio	$3,500,000	$35,000,000	$35,000,000
Delaware	$12,000,000	$24,000,000	$24,000,000
Kansas	$34,000,000		$34,000,000
New Hampshire	$10,000,000	$50,000,000	$50,000,000
San Francisco PUC	$300,000	$3,000,000	$3,000,000
Santa Fe	$150,000	$1,500,000	$1,500,000
Toledo Port Authority	$15,000,000	$75,000,000	$78,000,000
Cleveland	$500,000	$3,800,000	$3,800,000
Maryland Clean Energy Comm	$2,800,000	$10,000,000	$10,000,000
University Park	$125,000	$1,250,000	$1,250,000

Data was collected by TA Engagement Leaders, from grantees who have engaged with TA Team to design, develop, and implement financing programs. Additional financing activity is occurring, though in smaller volume than the grantees represented here. December 2010.

The Program that actively learns can overcome any obstacle

Predicting every challenge and opportunity at the inception of a program is impossible -- the most successful and programs are those that implement an active learning process and adapt to opportunities and threats as they are encountered.

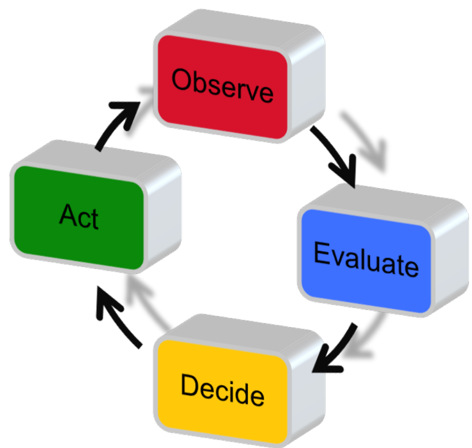
The Active Learning Cycle

1. Collect data and take measurements

2. Put the data into context, distill it into comparable metrics, rate and score different sectors, etc.

3. Determine what should be done to improve, correct, or adapt

4. Take action -- shift resources to the best performers, improve the performance of the worst performers, etc.



Jeff Immelt, CEO of GE, frequently told his managers that he what he most wanted was for them to "Fail Rapidly"! He told them that he expected them rarely be able to get it right on the first try – the key is to try lots of things, assess them, and learn from the mistakes in order to get to the winning solution as quickly as possible.

Tools

1. *Program Goals and Design Deck*
2. *Action Plan*
3. *Financial Program Modeling Spreadsheets*
   - *Loan Capital cash-flow by month*
   - *Loan Loss Reserve and Interest Rate Buy-down Model and Balancer*
   - *Secondary Market sales cash-flow integrated with Loan Capital cash-flow*
   - *Demand Creation Tracker and Analyzer*
   - *Workforce Tracker and Analyzer*

Other tools and samples available

1. *Financial Product Term Sheet*
2. *Financial Partner RFP*
3. *Financial Partner Contract Terms and Conditions*

Program Goals and Design Deck

A project management tool for establishing consensus on the broad direction of a program.

Clarity of Mission and Tools

- The Program Manager is empowered to define what the program will attempt to accomplish, how it will accomplish it, and who will be involved. Often just as important, what will NOT be accomplished is also explicitly stated.

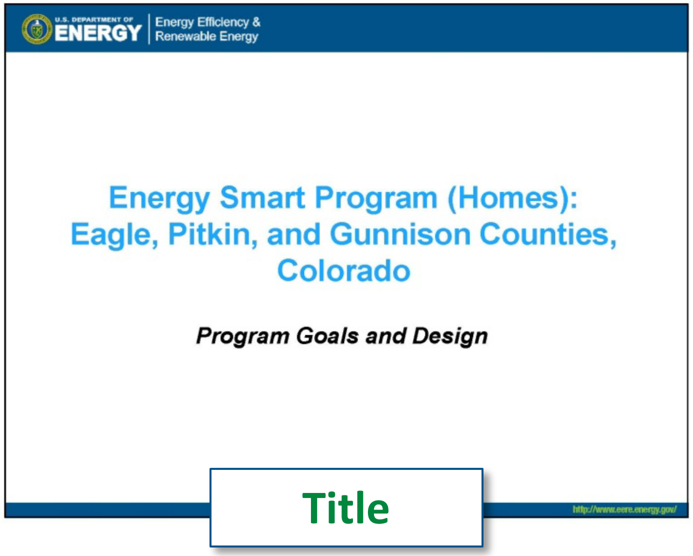
Initiating the Habit of Decision Making

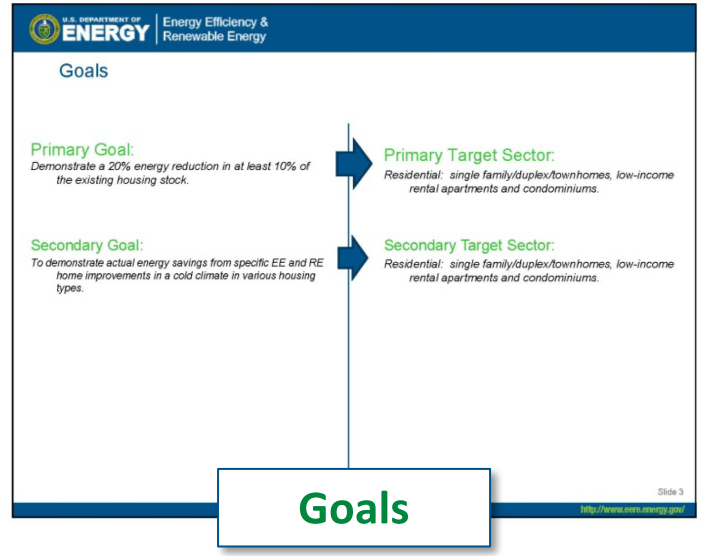
- During the early stages of developing a pioneering program, imagining the possibilities becomes almost intoxicating. But, in order to enter the execution phase, the Program Manager must begin to make decisions that commit the program to certain courses of action and give up others. This tool begins that process for the Program Manager.

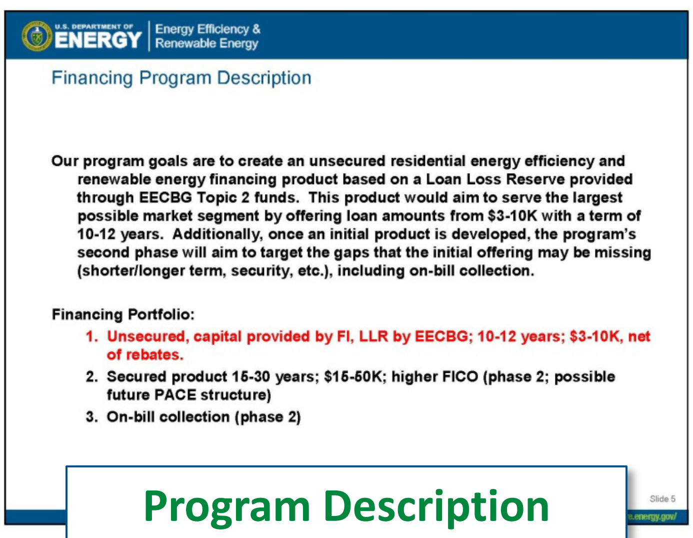
Communicating to Stakeholders

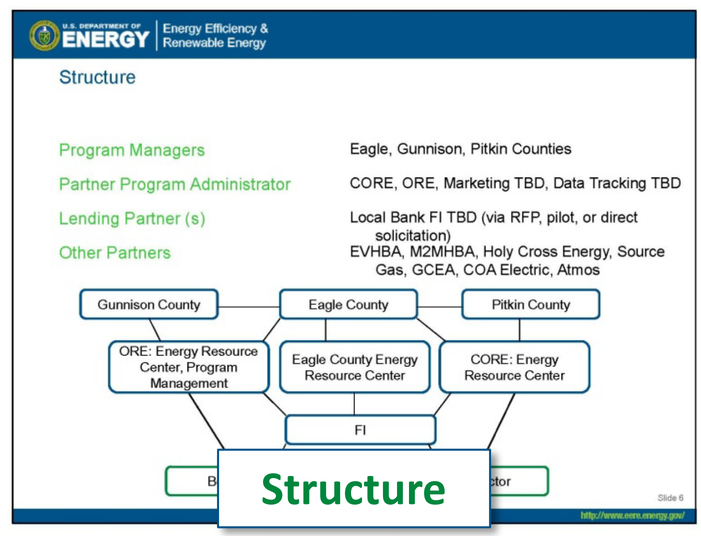
- Program Managers must deal with a broad range of both internal and external stakeholders. Communicating early and often is paramount, and this tool provides an easy to digest explanation of the many aspects of a financing program even to unfamiliar audiences.

Program Goals and Design Deck









Program Goals and Design Deck

Unsecured Loan Budget

	$	Source
Loan Capital Fund	$17,952,500 (@ 20:1)	5-10% LLR ongoing (but 90% LLR for term of initial program)
Credit Enhancement LLR Fund	$897,625	EECBG
Launch Start up Admin	$60,000	EECBG, allocated, obligation tbd
Operating Costs	1% to 2% of loan value	By FI operating program, offset through program revenues

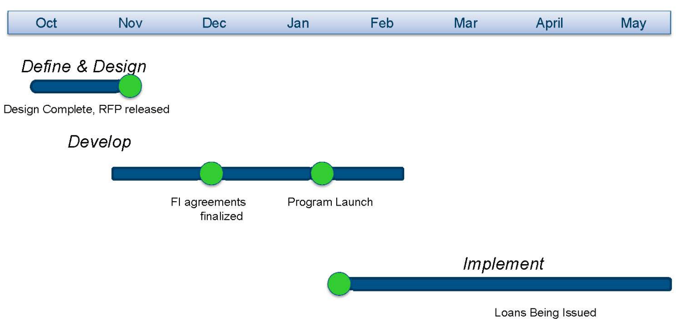
Budget

Loan Product Description

Loan Term	10-15 years based on loan size
Loan Rates	Goal of 5% to 7%
Minimum size of loans	$3,000
Maximum size of loans	$10,000
Eligibility for Borrowers	FICO Score >640 or TBD by FI
Eligible Measures	Attached eligible EE/RE Measures and Criteria
Special Restrictions	TBD

Loan Product

Unsecured EE Loan Timeline



Timeline

Resources to be Committed

Agency	Personnel	Time Period
Adam Palmer	Program Manager, Eagle County	2010 - 2013
Andris Zobs	Program Manager, Gunnison County	2010 - 2013
Dylan Hoffman	Program Manager, Pitkin County	2010 - 2013
Local Bank other FI	VP Consumer Loans	2010 - TBD
U.S. DOE	Nicole Reed, Account Manager	2010 - TBD
U.S. DOE	Matt Tenney	2010 – 2011

Resources / Personnel

Action Plan

A project management tool for managing the timeline of multiple tasks and responsible parties.

Visibility to the Whole

- The Action Plan consolidates all of the various tasks required to develop, launch, and manage a program in one place
- It organizes them sequentially, and can include dependencies that allow team members to see who is waiting for the completion of their tasks, and the Program Manager to identify and calculate the critical path

A Culture of Ownership

- Publishing the Action Plan with Owners identified with responsibility for specific tasks encourages the completion of those tasks
- The Program Manager's ability to influence, often without authority over external team members, is magnified when the entire team and external stakeholders see that a team member has signed up for responsibilities

Action Plan

The action plan is a standard project management tool that empowers the program manager to identify all tasks required, their sequence, their expected duration, and the personnel responsible.

In developing this tool with grantees, we have generated many revelatory moments in which program managers for the first time saw the entire scale of work ahead of them in a complete and organized form.

Finance Program Project Management Tool				*Today's Date*	*12/7*
	Owner (Responsibility)	**Start Date (Expected)**	**Completion Date (Expected)**	**Start Date (Actual)**	**Completion Date (Actual)**
County of Santa Barbara		*$'s in Program*	*Type of Program*	*Sector of Program*	
emPowerSBC		**$1,000,000**	**LLR**	**Residential**	
Define & Design		10/31/10	12/14/10	10/31/10	12/14/10
Pre-Workshop Plan		11/3/10	11/12/10	11/3/10	11/12/10
Acceleration Workshop		11/16/10	11/29/10	11/16/10	11/29/10
Implement		2/15/10	8/1/13	11/23/10	8/1/13
Procurement Process	*Greg/Angie*	11/23/10	1/3/11	11/23/10	
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Loans made	Chosen bank	5/1/10	8/1/13		
Projects Initiated	Angie	5/15/10	8/1/13		
Projects Completed	Angie	5/30/10	8/1/13		
Actionable Intelligence gathered	*Angie*	6/1/10	8/1/13		
Continuous Improvement Activities Running	Angie	6/1/10	8/1/13		

Spreadsheet Model of Program

A tool for managing complex, data-driven programs.

Design and Scenario Testing

- A spreadsheet tool allows a Program Manager to construct an entire program and understand whether the outcomes will meet their program goals
- The Program Manager can play with different values for the wide range of variables that go into defining a complex program, and quickly see the varying impacts

Rapid Updates to Projections

- Once the program has been launched, actual performance data can be collected and inserted into the model to instantly update projections for key metrics such as Expenditure Date, Number of Loans, etc.

Early Detection of Risks

- As scenarios are tested, situations which could lead to program failure can be identified
- Once the program is running, updated projections will immediately detect conditions that could lead to program failure

Analysis of key metrics will rapidly inform the Program Manager of where the troubles lie, and aid them in prioritizing trouble-shooting and corrective actions

Financial Modeling Spreadsheets

Loan Loss Reserve Financial Program Model

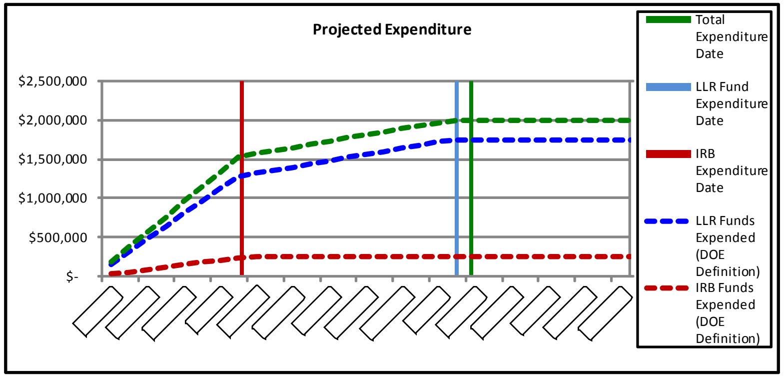
Inputs

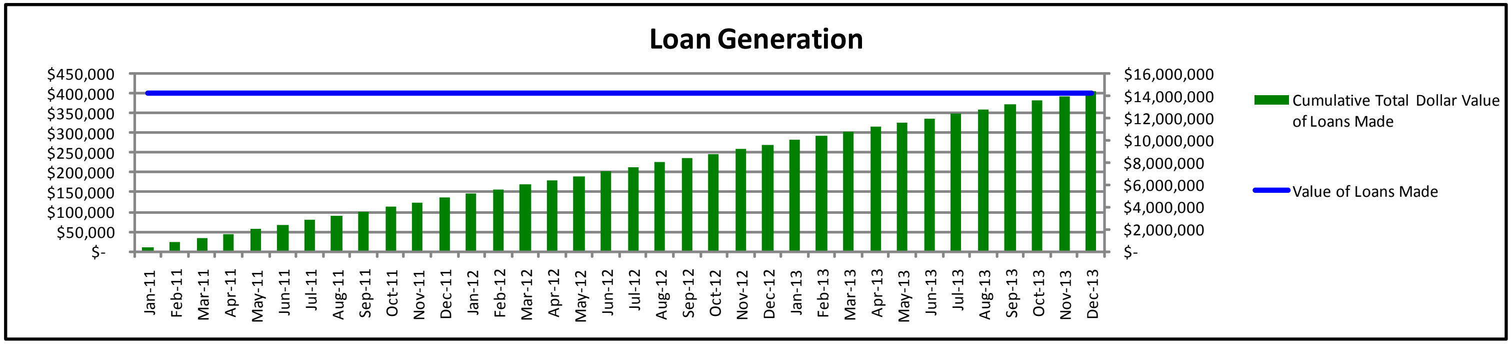
	Input Cells		Output Cells
Fund Start Date	Jan-11		
IRB/LLR Allocation			
Total Amount of Funds to Allocate Between LLR and IRB	$2,000,000		
Value Of Funds Allocated to LLR	$1,750,000		
Value Of Funds Allocated to IRB	$250,000		
	OR		
Loan Loss Reserve Characteristics			
LLR In Effect (Yes or No)	Yes		
Introductory Loan Loss Reserve Fund % (exclusive of Base)	0%		0%
Base Loan Loss Reserve Fund %	10%		10%
Introductory LLR % Period (In Months)	3		
Interest Rate Buydown Characteristics			
IRB In Effect (Yes or No)	Yes		
Market Loan APR	11.00%		
Target Loan APR	8.00%		
Cost of Interest Rate Buydown Per Loan	$718		

Lending Performance Characteristics	**Baseline**	**Actuals Avg**	*Selection*
Projected Average Number of Loans Made per Month	50	42	Baseline
Average Expected Loan Size	$8,000	$6,879	Baseline
Average Loan Term (Years)	7		Baseline
Loan Portfolio Default Rate	4.00%		Baseline

Results

Total Volume of EE Loans Made Through LLR	$18,421,053	
Total Number of EE Loans Made Through LLR	2,303	
Total Volume Loans Made at Target Interest Rate of 8%	$2,786,452	
Total Number of Loans Made at Target Interest Rate of 8%	348	
Actual Leverage Ratio	**9.2:1**	
Capital Remaining At The End of The Fund	**$1,046,000**	
Month 25% DOE Expenditure Achieved	**Feb-11**	25%
Month 50% DOE Expenditure Achieved	**May-11**	50%
Month 75% DOE Expenditure Achieved	**Jul-11**	75%
Month 99% DOE Expenditure Achieved	**Jul-12**	99%



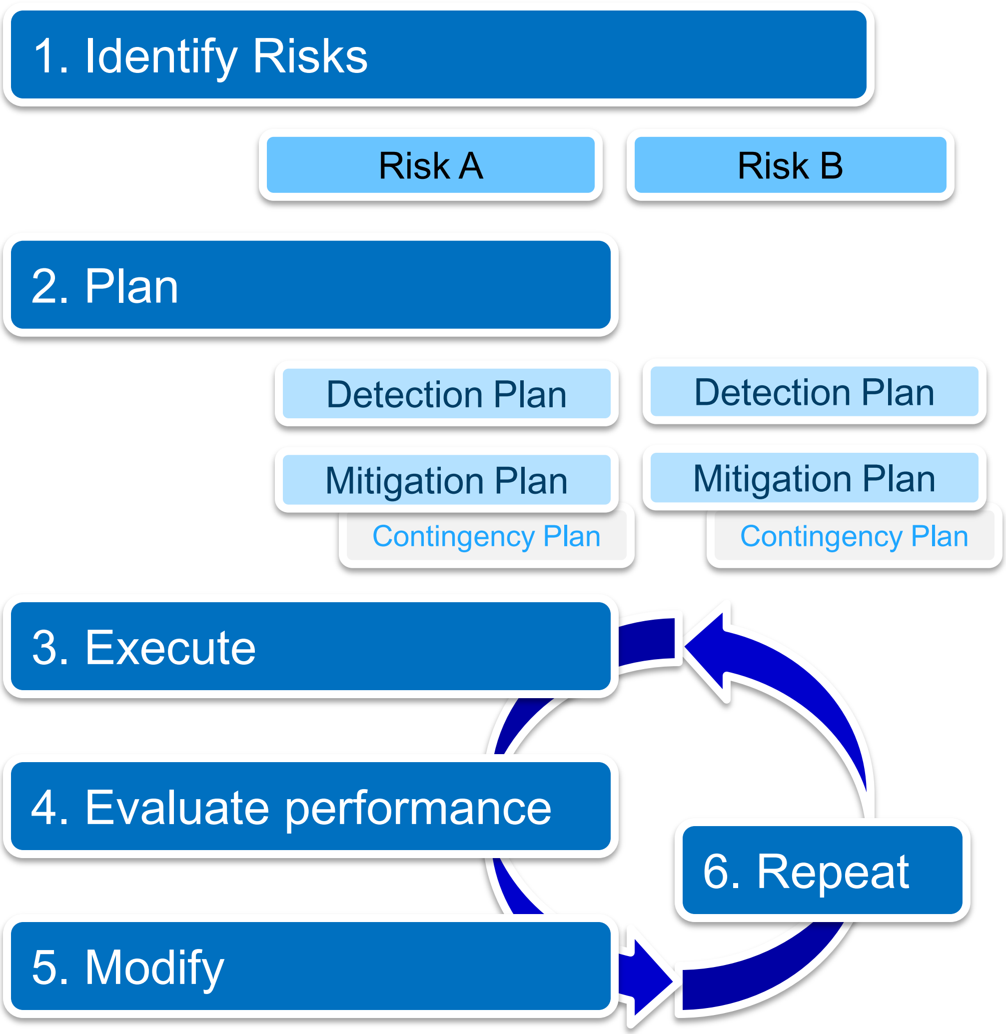


Basel
Actua
Projec

Yes
No

Risk Management Strategy

1. Identify risks through brainstorming, asking external stakeholders and consultants, etc.
2. For each risk, determine a detection plan and a mitigation plan
   a) Detection focuses on early and accurate awareness of problems
   b) Mitigation then deals with the problem
      - Contingency Planning
3. Execute the plans by performing the work and gathering the performance data
4. Evaluate the performance data, assessing what worked, and what did not
5. Make modifications to the program plans to take mitigate what did not work and take advantage of what did
6. Continuously repeat execution, evaluation, and modification



Contingency Plans

A program tool for managing unexpected or undesired outcomes.

Be Prepared

- Predictions are never perfect – unexpected factors can derail even the best programs
- In order to still accomplish the highest priority goals, every program should have a Plan B, C, & D

Have a Plan B

- Program Managers should take the time early on to design a plan that will achieve critical goals with high certainty, even though they may sacrifice many secondary goals

  Example: A critical goals is Full Expenditure by the DOE contract date

    - A Plan B to achieve this goal would be capable of rapidly expending ARRA funds with near certainty

Criteria for Executing the Contingency Plan

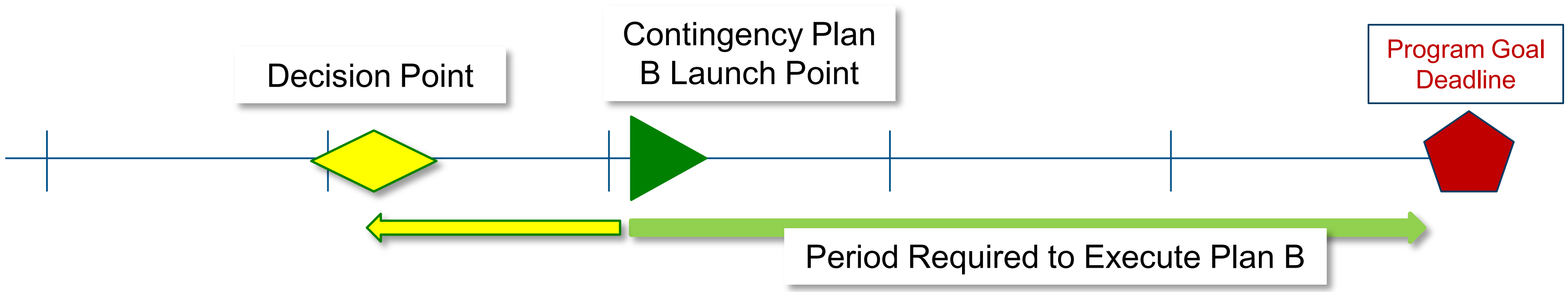
- Establishing early on the criteria for executing the Contingency Plan is just as important at the plan itself

Put the Contingency Plan in a box on a shelf with a sign that reads

“Open Case of Emergency”

Contingency Plans

1. Calculate the lead time required to execute, add a buffer, and then set the date as the Decision Point
2. Get stakeholder consensus and record the metrics and criteria that will be used to make the decision to execute the Contingency Plan



Potential Criteria for triggering a Contingency Plan

a) Projected expenditure of funds exceeds the contract period
b) Un-expended funds exceeds $____
c) Demand for loans has not grown for ____ number of periods

Risks Associated with Financing Programs

Insufficient demand for loans

- Causes
  - Poor marketing plan or execution
  - Unwieldy application process
  - Overly restrictive underwriting
- Threat
  - Too few loans = incomplete expenditure of ARRA funds employed in loan capital or loss reserves
- Mitigation Measures
  - Expert review of demand creation plan and sharing of national best practices
  - Dedicated measurement plan established PRIOR to initiating campaigns
  - Regular review of actionable intelligence to identify lessons to be learned
  - Regular adjustment of campaigns and re-allocation of resources to capitalize on lessons learned

Risks Associated with Financing Programs

Disunity of integrated program elements

- Causes
  - Lack of coordination between demand creation, workforce, and financing efforts
  - Timing between efforts cripples execution: demand is created before contractors are available, contractors are trained before financing is available, etc.
  - Data and information is not shared, resulting in contractors being unable to take advantage of loan products, advertising that does not lead consumers to engage with contractors, financing products that do not correspond to the projects that contractors offer, etc.
- Threat
  - Accusations of incompetence and failures to execute
  - Inefficient employment of resources
- Mitigation Measures
  - Goals and Design of program clearly stated and communicated to all stakeholders at inception
  - Integration spreadsheet models tailored to identify bottlenecks, under- and over-capacities
  - Communication and cross-training plans to empower marketers, contractors, and lenders to act in the interest of integration

Risks Associated with Financing Programs

Failure to learn from mistakes, to adapt and improve

- Causes
  - No measurement plan to collect actionable intelligence established PRIOR to embarking on an activity
  - No plan to regularly assess results, identify goods & bads, and implement improvements
- Threat
  - Programs that fail to deliver on promises and potential
  - Public dollars are spent, but nothing is learned to help new programs do better the next time
  - Difficulties are not overcome, leading to delays to full expenditure of ARRA funds
- Mitigation Measures
  - Measurement plan established PRIOR to initiating activities
  - Continuously updated projections for program performance and ARRA expenditure
  - Regular review of data to derive lessons learned
  - Regular adaption of program activities to take advantage of actionable intelligence
  - After actions captured to provide lessons learned on failures as well as successes

Risks Associated with Financing Programs

Breakdown of contracted partnerships with Financial Institutions and others

- Causes
  - Insufficient knowledge of financial institutions and their operations
  - Insufficient anticipation of potential pitfalls and contingencies
  - RFPs and contracts that do not leverage best practices
- Threat
  - Delays or even cessations to programs due to contract disagreements or dysfunctions
- Mitigation Measures
  - Training on the perspectives and needs of financial institutions
  - Sharing of best practices and expert assistance in negotiations
  - Library of sample successful RFPs and contracts

Look for a DOE Webinar on Contract & RFP Terms and Conditions for Financing Program Partnerships coming in February

Conclusion

Financing Programs are complex and require active management to succeed, but with a few tools and some planning you WILL succeed in forging a new energy future for our nation.

Seize control of your program with tools that increase visibility ***– and empower your entire team***

Seek out performance data to see into the future ***– look for opportunities and mitigate risks early***

Strive to learn something new from every activity the program engages in ***– constantly improve and adapt***

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Appendix

1. Sample “Implementation Action Plan” created by Santa Barbara, California
2. Sample “Program Goals and Design” deck created by Eagle County, Colorado at Workshop 1

Implementation Action Plan for Santa Barbara

Finance Program Project Management Tool

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Energy Smart Program (Homes):

Eagle, Pitkin, and Gunnison Counties, Colorado

Program Goals and Design

Contents

Goals

Design

Timeline

Personnel to be Committed

Goals

Primary Goal:

Demonstrate a 20% energy reduction in at least 10% of the existing housing stock.

Primary Target Sector:

Residential: single family/duplex/townhomes, low-income rental apartments and condominiums.

Secondary Goal:

To demonstrate actual energy savings from specific EE and RE home improvements in a cold climate in various housing types.

Secondary Target Sector:

Residential: single family/duplex/townhomes, low-income rental apartments and condominiums.

Contents

Financing Program Description

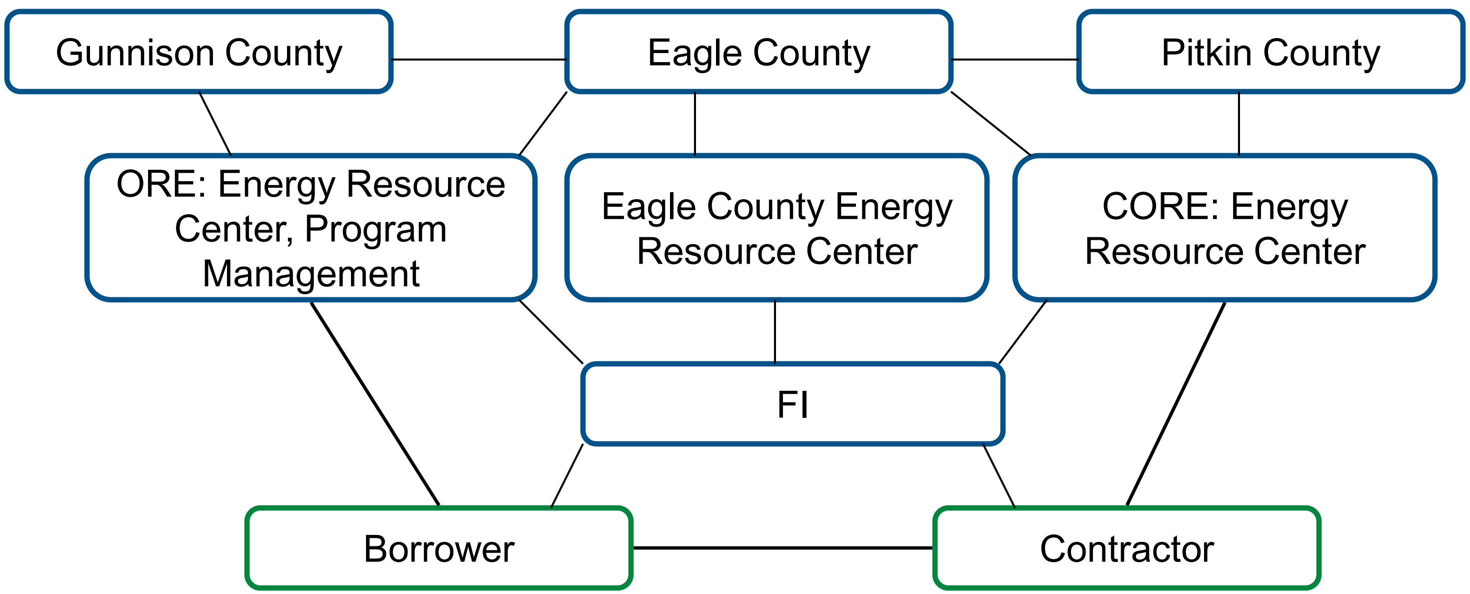
Our program goals are to create an unsecured residential energy efficiency and renewable energy financing product based on a Loan Loss Reserve provided through EECBG Topic 2 funds. This product would aim to serve the largest possible market segment by offering loan amounts from $3-10K with a term of 10-12 years. Additionally, once an initial product is developed, the program's second phase will aim to target the gaps that the initial offering may be missing (shorter/longer term, security, etc.), including on-bill collection.

Financing Portfolio:

1. **Unsecured, capital provided by FI, LLR by EECBG; 10-12 years; $3-10K, net of rebates.**
2. **Secured product 15-30 years; $15-50K; higher FICO (phase 2; possible future PACE structure)**
3. **On-bill collection (phase 2)**

Structure

Program Managers	Eagle, Gunnison, Pitkin Counties
Partner Program Administrator	CORE, ORE, Marketing TBD, Data Tracking TBD
Lending Partner (s)	Local Bank FI TBD (via RFP, pilot, or direct solicitation)
Other Partners	EVHBA, M2MHBA, Holy Cross Energy, Source Gas, GCEA, COA Electric, Atmos



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Eligibility for Borrowers	FICO Score >640 or TBD by FI
Eligible Measures	Attached eligible EE/RE Measures and Criteria
Special Restrictions	TBD

Content

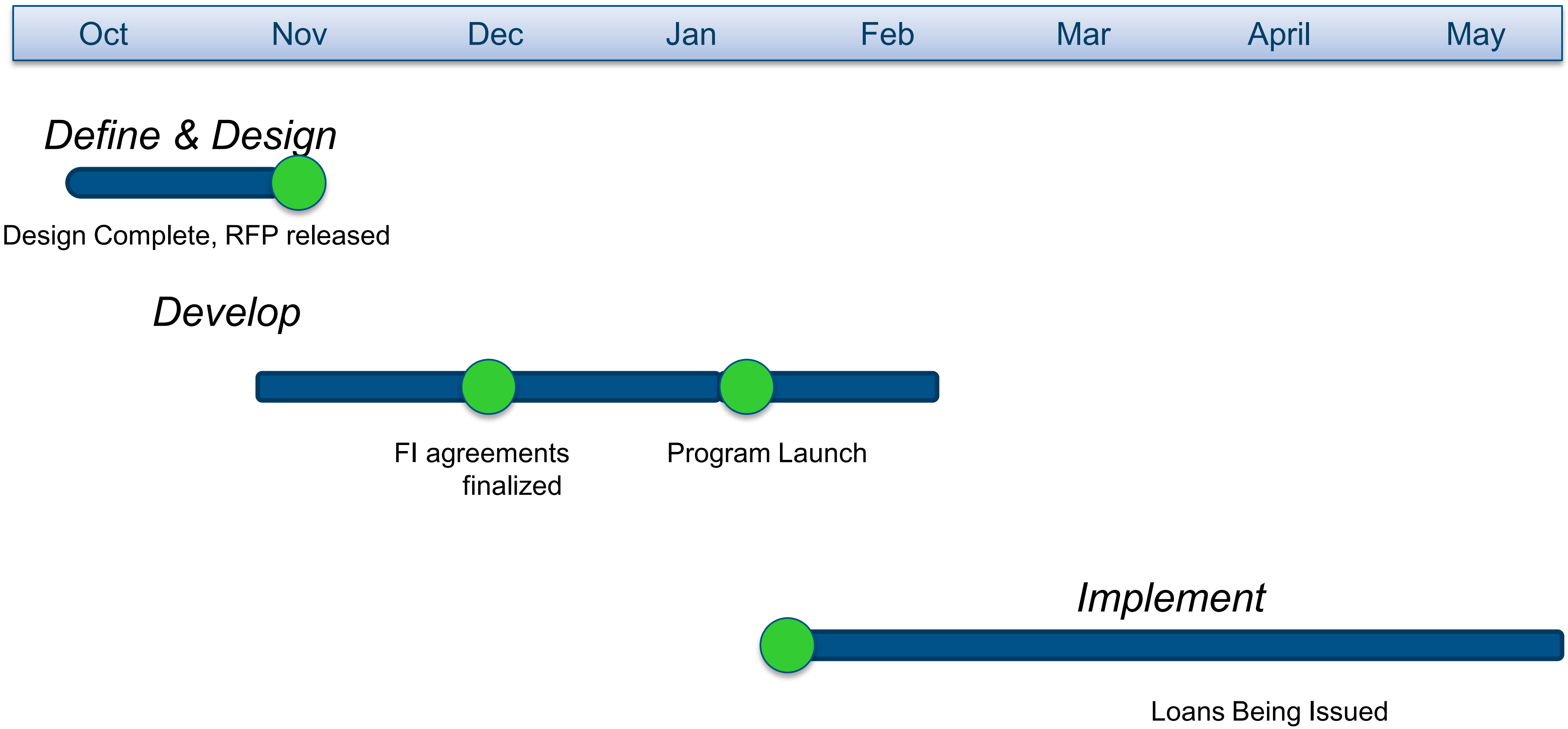
Goals

Design

Timeline

Personnel to be Committed

Unsecured EE Loan Timeline



Content

Goals

Design

Timeline

Personnel to be Committed

Resources to be Committed

Agency	Personnel	Time Period
Adam Palmer	Program Manager, Eagle County	2010 - 2013
Andris Zobs	Program Manager, Gunnison County	2010 - 2013
Dylan Hoffman	Program Manager, Pitkin County	2010 - 2013
Local Bank other FI	VP Consumer Loans	2010 - TBD
U.S. DOE	Nicole Reed, Account Manager	2010 - TBD
U.S. DOE	Matt Tenney	2010 – 2011