



UNIVERSITY *of* CALIFORNIA · IRVINE

Power Purchase Agreements

Owners Perspective

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Agenda

- About UC Irvine
- Buy / Lease / PPA
- Background
- The PPA Process
- Questions



Please silence your phone unless you have a really funny ringtone!

University of California, Irvine



Category One research university
\$18M annual utilities budget

Lab buildings consume 2/3 of campus energy

Many energy initiatives to reduce carbon footprint

Solar Project Delivery Methods

	Buying	Leasing	Solar PPA
Upfront Capital?	Yes	Little or None	NONE
Maintenance Required	Yes	Yes	NONE
Performance Risk	Yes	Yes	NONE
System Expertise Required	Yes	Yes	NONE
Purchase Required	Yes	Yes / or Re-Lease	NONE

What am I buying vs What is being provided

You're buying the power !



Not the System !



What will the Provider do?

- **Provider Constructs/Owns/Maintains solar project for the entire length of the PPA.**
- **Provider receives federal tax credit (cash grant), State rebate and depreciates equipment**
- **Provider sells electricity at negotiated rate (with or w/o escalator)**
- **10 to 25 year term**



Allocating Risk

➤ Before Construction

- Environmental Compliance (CEQA)
- Completion Timing
- Bonds/Letter of Credit
- Insurance
- Buyout Clause
- Underperformance
 - Monetary Penalty
 - Breach / Default

➤ After Construction

- Maintenance
- Operation



Solar Power Purchase Agreement Process

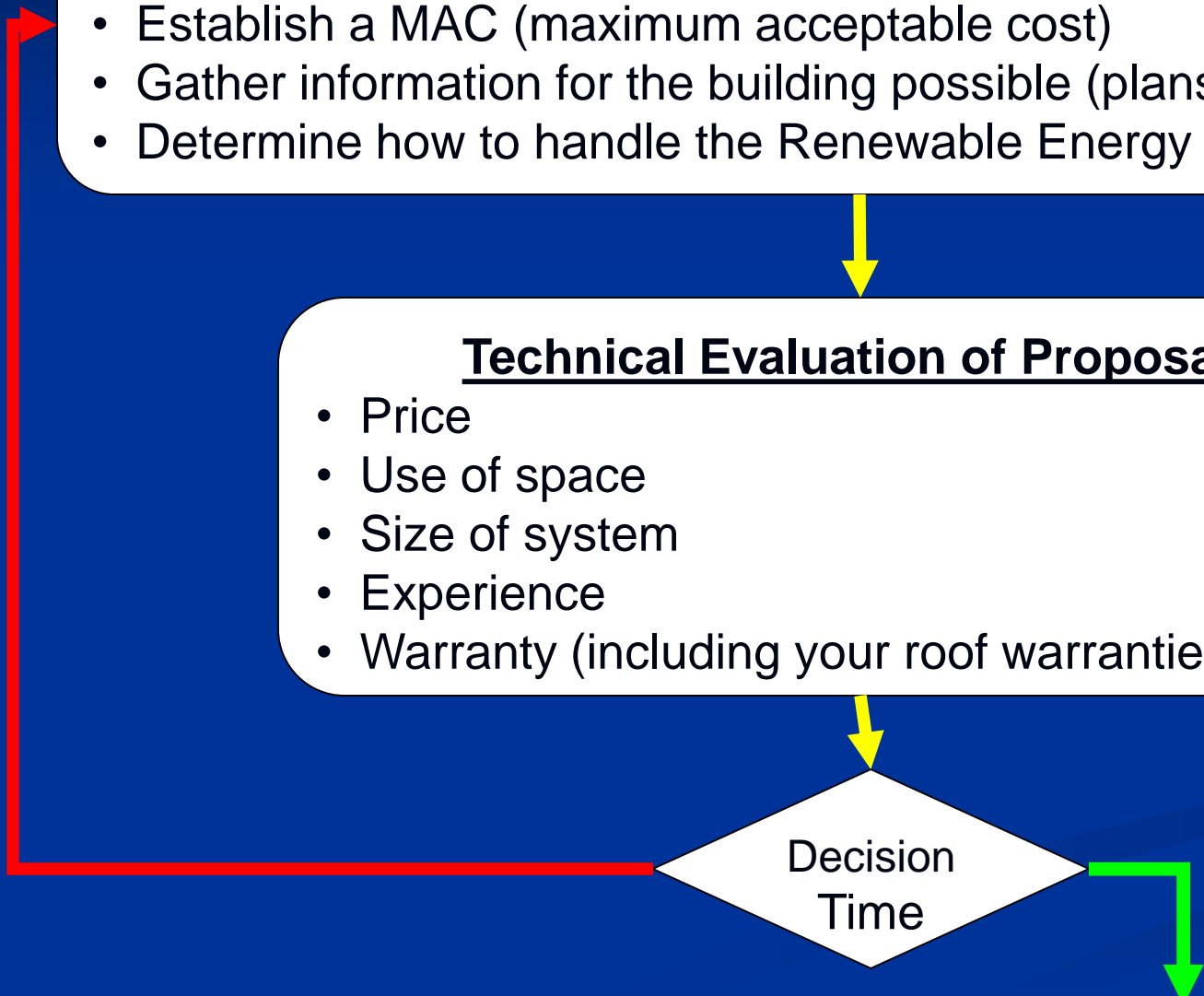
RFP

- Decide the parameters of the PPA
- Establish a MAC (maximum acceptable cost)
- Gather information for the building possible (plans, existing warranties)
- Determine how to handle the Renewable Energy Credits

Technical Evaluation of Proposals

- Price
- Use of space
- Size of system
- Experience
- Warranty (including your roof warranties)

Decision
Time



Request for Proposals

- Define the terms that fit your organization and clearly place them into the RFP
 - UCI defined rooftop only installations would be accepted
- Know your current electric rate structure, including demand charges. Predetermine a price with escalation you will be willing to pay for the duration of the agreement.
 - You may or may not wish to include this information in your request but you will be asked about it
- Plans, Existing Warranty information. The more complete the better response you will receive.
 - UCI included in the RFP and Contract that all existing warranties must be maintained or acquired by the successful bidder.
- The REC's will make a difference decide if you will retain them.
 - UCI optioned the REC's after 5 years.

Solar Power Purchase Agreement Process

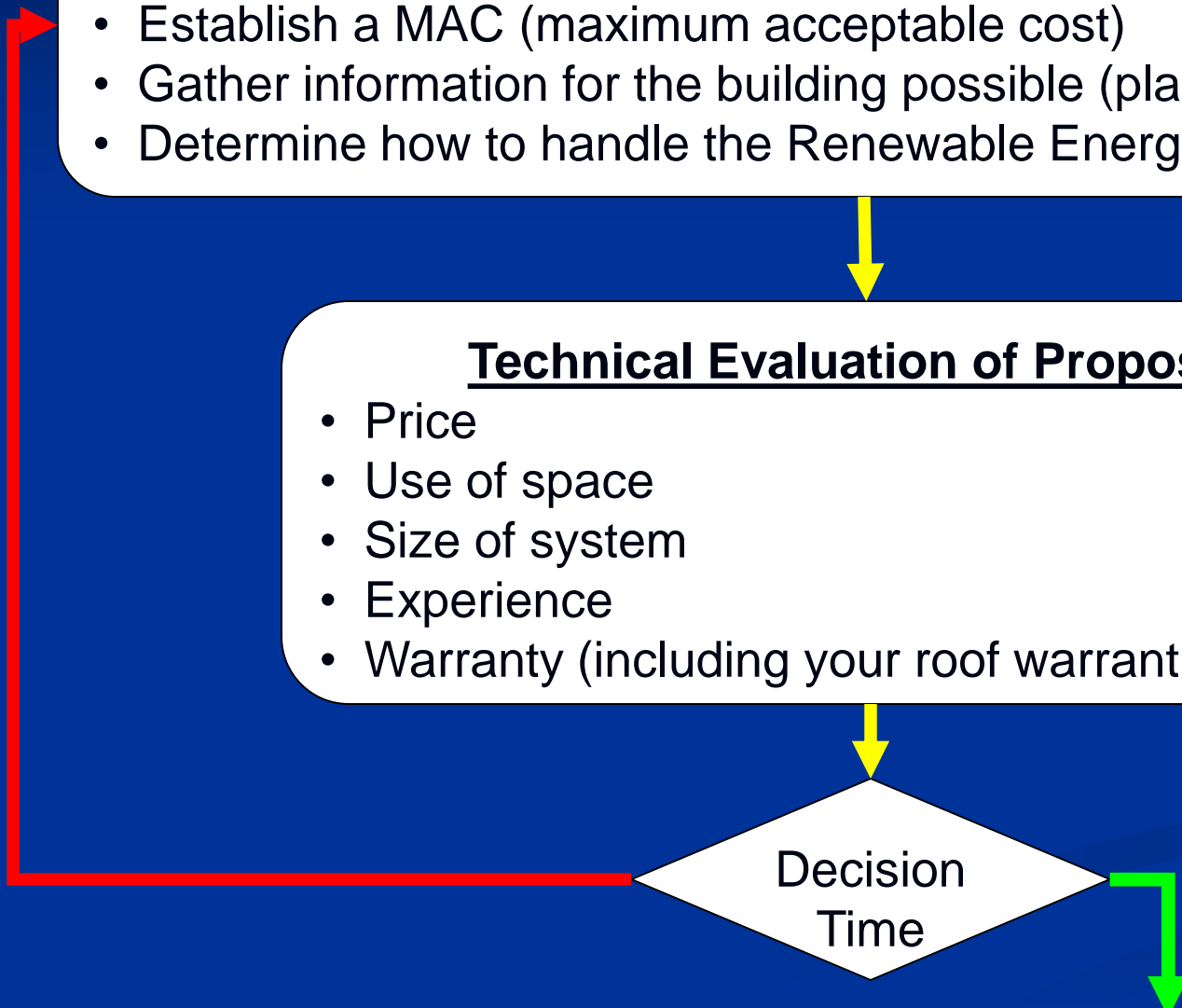
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Technical Evaluation of Proposals

- **Proposal Process.** Selection shall be based upon a “best value” approach. Each Proposer will submit their Proposal in two envelopes, the first covering qualifications and technical information and the second providing price information. Each Proposer must submit its proposal in two sealed “envelopes” or boxes, each one clearly labeled on the outside as:

Envelope #1: Technical Proposal & Qualifications

Envelope #2: Price Proposal

- In the RFP a scoring system should be established to evaluate submissions.
 - Experience – Does the company have the capabilities / financing to follow through ?
 - Use of space – Did the proposal use only space you can dedicate to solar ?
 - Size of system – Is the system too big/small
 - O&M plan, Billing Plan, Monitoring Plan
 - Warranty – Are all of your existing warranties maintained and what are they providing ?
 - Price – Did the proposal meet your preset maximum acceptance cost?

Solar Power Purchase Agreement Process

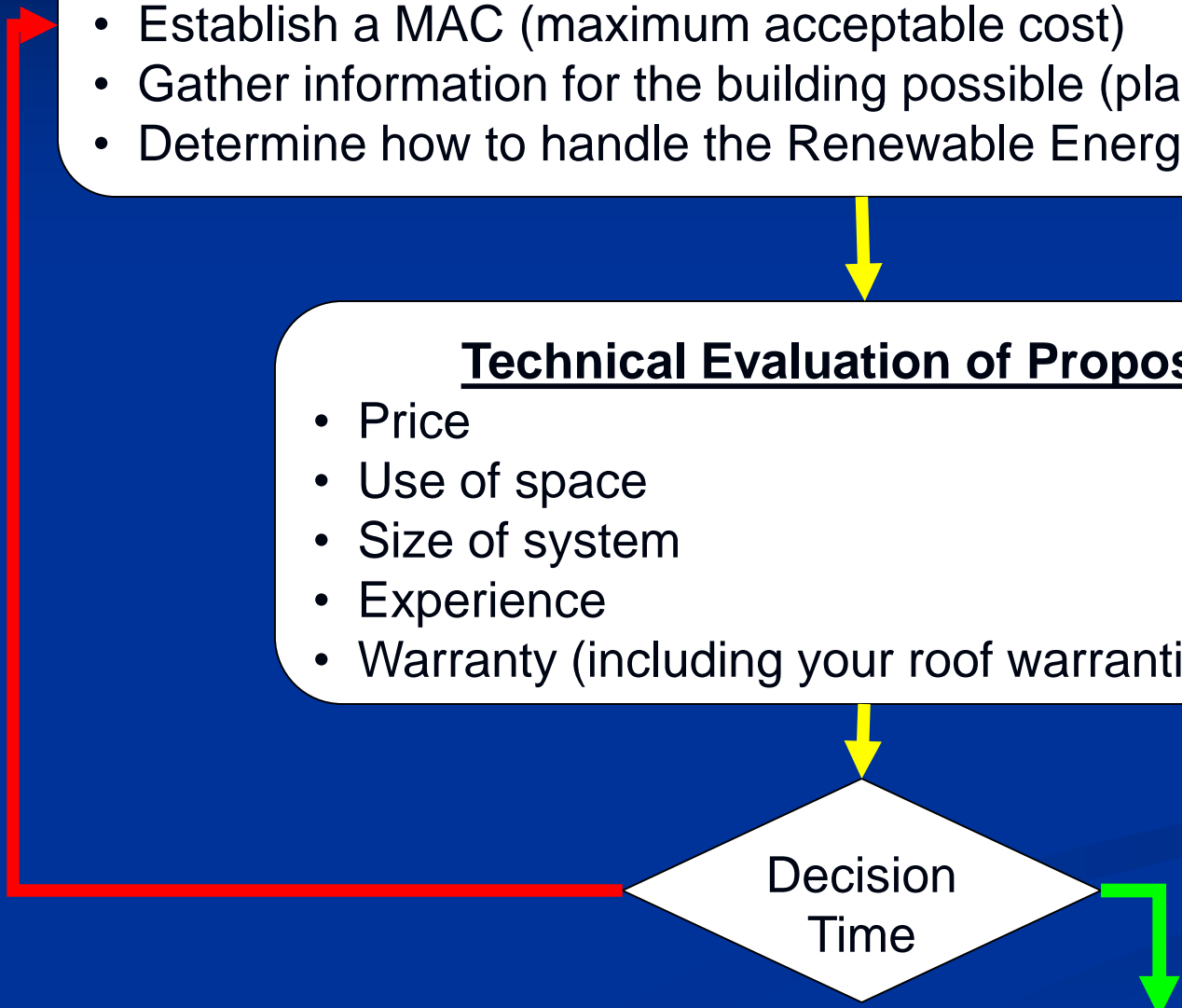
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Decision Time

- Yes – Move forward with a contact
- No – Determine why the RFP did not generate successful proposals and try again.
 - UC Irvine went through 3 rounds of RFP before the system was successfully installed.

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graph TD; A[Contract Development] --> B[Design and Construction]; B --> C[Post Construction]; C --> D[Billing, REC's, Audits, The next 20 years];
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Contract Development

- General Terms and Conditions
- Last chance to change any wording you don't like

Design and Construction

- Protect the campus
- Not your system
- Fire marshal

Post Construction

- Site Visits
- Who's responsible
- Responding to Problems
 - Training

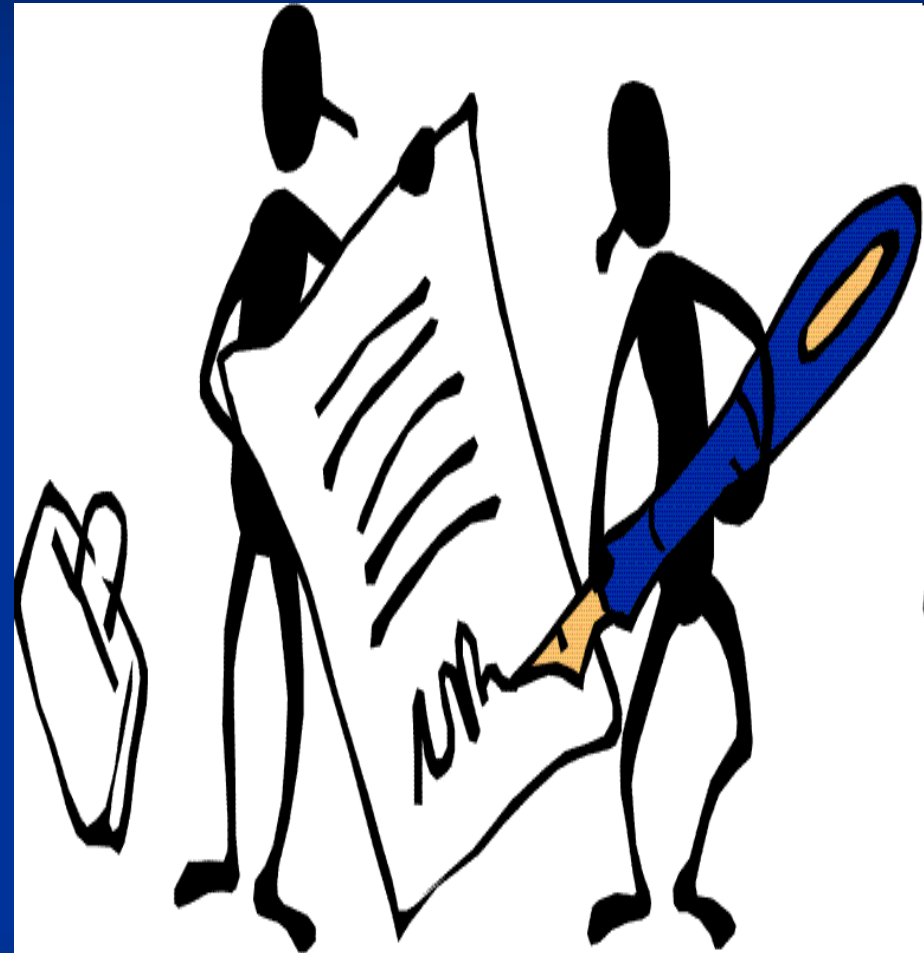
Billing, REC's, Audits, The next 20 years

Contract Development

■ General Terms and Conditions

- Force Majeure
- Easements
- Acceptance Testing
- Health and Safety
- Host Inspection Rights
- Grant of License or Lease
- Early Termination
- Approvals and Permits
- System Removal
- Dispute Resolution
- Warranties
- Insurance
- Severability
- Indemnity

- Legal will need to be involved and this may or may not be an upfront cost to your organization.



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Design and Construction

■ Plan Review

- Protecting your infrastructure
- Make sure all plans are stamped by licensed engineers for both civil, structural, and electrical drawings.
- Drawings must be reviewed and stamped by the Fire Marshal.
- Permitting may be required, the contractor should pull all required permits and submit copies to the owner.

■ It is not your system

- It is important to remember in the review process you are protecting your building but not reviewing the system design.

■ Inspection

- As part of the contract development you may have chosen to include private inspection during the construction process.

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Post Construction

■ Site visits

- Develop a procedure for system access and maintenance. The contractor will most likely need to service and clean the system and a protocol for this should be established prior to completion.

■ Who's responsible

- Do you know who to call if the roof leaks, there is an emergency, or you need to shut the system down?

■ Responding to Problems

- Have you defined the acceptable time frame for responding to problems? Who will be coming out to take care of these issues and making sure it is corrected to the owners satisfaction.

■ Training

- Your building now has 2 electrical feeds. Staff will need to understand that to safely work on the buildings electrical system there are new requirements.
- In the event of a fire / earthquake / gas leak / or other event how to safely de-energize the system.

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Billing, REC's, Audits, The next 20 years

Billing, REC's, Audits, The next 20 years

- Where are the bills going to be sent?
 - You now have a second electrical bill that will need to be paid and verified.
- Did you keep the Renewable Energy Credits?
 - These can be used for LEED® credits and CO2 offsets but only if you hold them!
- Verification that the meter readings are correct is important.
 - UC Irvine has written into the contract independent meter verification at our request and how discrepancies are to be dealt with.

QUESTIONS ?



Download Link

<https://webfiles.uci.edu/mgudorf/Solar%20PPA%20Presentation.ppt>

UC Irvine RFP

<https://webfiles.uci.edu/mgudorf/Solar.zip>