

# Community Solar Development from Start to Finish

Dylan Connelly  
Director of Commercial and Community Solar Development  
[dylan.connelly@affordable-solar.com](mailto:dylan.connelly@affordable-solar.com)

# Blue Zones

## Ikigai

translated as: “that which makes life worth living”  
having a purpose in life.

# my Ikigai

To demonstrate and teach  
living in balance with the energies of nature



TRUSTED. RELIABLE. LOCAL.

# WHY AFFORDABLE SOLAR?

4,000+

NEW MEXICO  
INSTALLATIONS



160+

LOCAL  
EMPLOYEES

4.63



4.7



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OVER 450 MW'S INSTALLED, WHICH IS APPROXIMATELY  
3600 ACRES OR 1.2 MILLION SOLAR PANELS

WE'RE RESPONSIBLE FOR MANAGING,  
OPERATING, AND MAINTAINING EVERY SINGLE  
SOLAR PANEL IN PNM'S FLEET

The Affordable Solar logo, featuring a yellow arc above the text 'affordable solar'.



**WELCOME TO THE SOLAR CLUB**  
2,000 STRONG AND GROWING





Roadrunner Food Bank  
ABQ, NM

solar + storage



Facebook Data Center  
Los Lunas, NM

130,000 panels



PNM  
ABQ & Santa Fe, NM

90,000 panels



# Accolades & Notable Projects

NEW MEXICO RANK	COMPANY	KW INSTALLED IN NEW MEXICO	% of Total New Mexico Market	PRIMARY MARKET	PRIMARY SERVICE	TOTAL KW INSTALLED IN U.S. IN 2019	OVERALL RANK
1	<a href="#">Affordable Solar</a>	153,519.50	73%	Utility	EPC	153,519.50	26
2	<a href="#">RP Construction Services (RPCS)</a>	16,700.00	8%	Utility	Installation Subcontractor	369,691.00	13
3	<a href="#">DKD Electric</a>	9,690.30	5%	Utility	Electrical Subcontractor	326,410.00	15
4	<a href="#">AUI Partners</a>	8,000.00	4%	Commercial	EPC	120,490.00	28
5	<a href="#">Sol Luna Solar</a>	5,857.00	3%	Commercial	EPC	5,857.00	152
6	<a href="#">PPC Solar</a>	5,302.20	3%	Commercial	EPC	5,302.20	160
7	<a href="#">Positive Energy Solar</a>	5,157.90	2%	Residential	Rooftop Contractor	5,157.90	162
8	<a href="#">Sunpro Solar</a>	2,059.00	1%	Residential	Rooftop Contractor	45,969.50	50
9	<a href="#">ION Solar</a>	1,717.10	1%	Residential	Rooftop Contractor	25,328.70	71
10	<a href="#">Titan Solar Power</a>	1,116.80	1%	Residential	Rooftop Contractor	82,308.40	35
11	<a href="#">Resolute Performance Contracting</a>	771.00	0%	Commercial	Installation Subcontractor	1,376.20	289
12	<a href="#">OE Solar</a>	618.10	0%	Commercial	EPC	618.1	354
13	<a href="#">Solar Smart Living</a>	475.60	0%	Residential	Rooftop Contractor	2,899.70	212
14	<a href="#">GRID Alternatives</a>	26.20	0%	Residential	Rooftop Contractor	8,380.30	123
15	<a href="#">Solar SME</a>	12.50	0%	Residential	Developer	669.1	347
<b>Total</b>		211,023.20					



# Why Community Solar



Cost	Output	¢/kWh 25 years
\$3.5/watt	1.75 kWh/watt/yr	8¢/kWh
\$1.5/watt	2.3 kWh/watt/yr	2.6¢/kWh

# Breaking Down the Solar Industry

**Developer:** Responsible for all aspects of the solar development process, including securing land rights, interconnection rights, building permits, and property tax agreements; working closely with engineering, finance and commercial teams when a project moves successfully to the 'pre construction' phase; and acting as lead project sponsor for the successful financing and construction of the project.

**Engineering, Procurement, and Construction (EPC) Company:** Provides end-to-end solar energy services, including designing the system, giving procurement details about the facility, and installing and maintenance the solar array.

**Subscription Management:** Responsible for administering and soliciting participants. Typically uses a software to manage and bill subscribers in a community solar program.

# Community Solar Development Process

Site Selection

Interconnection Pre-Application

Interconnection Application

Land Leasing & Permitting

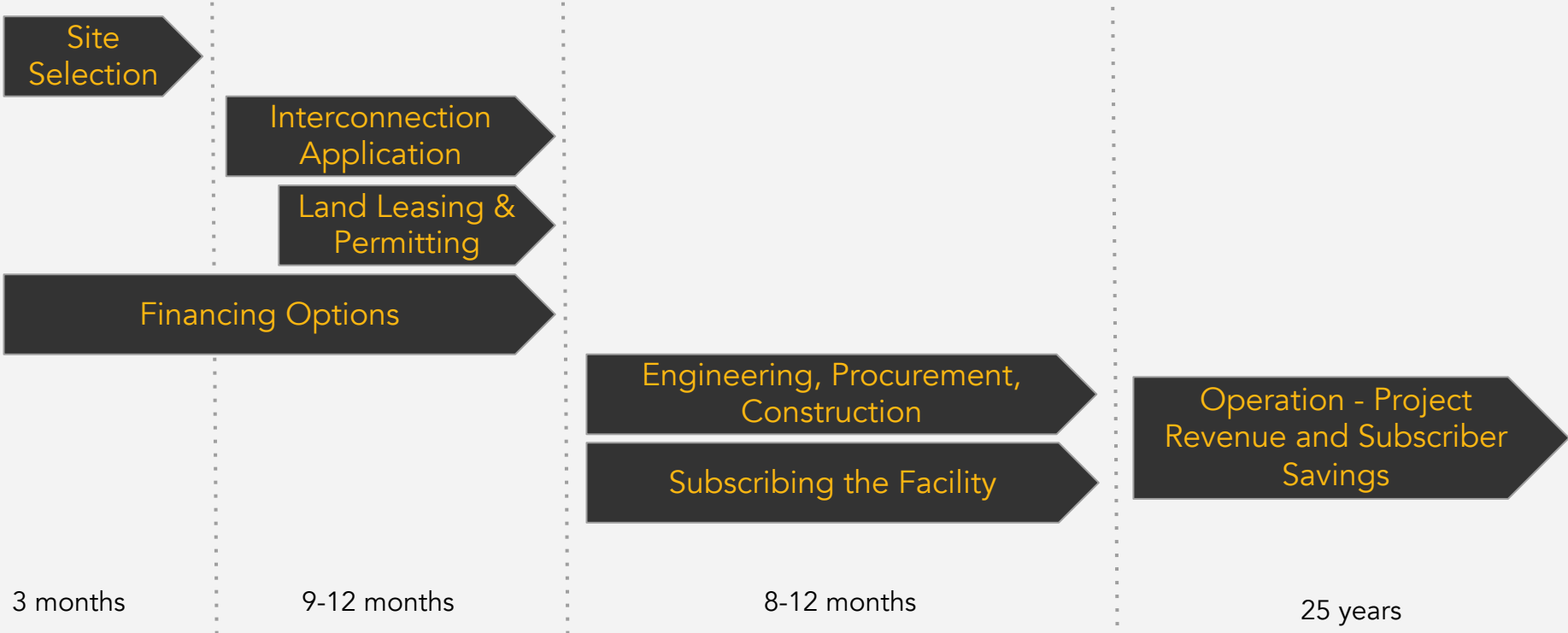
Financing Options

Engineering, Procurement, and Construction

Subscribe the Facility

Operations & Maintenance

# Community Solar Development Timeline



3 months

9-12 months

8-12 months

25 years

Approximately 2 Years Until Project Operation - Could be January 2024



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Considerations:

Interconnection Viability

Topography

Site shape and size

Cultural Considerations

## Site Selection



0-1/4 Mile from Three Phase Power Lines



0-5 Miles from Substation

Site Selection



**THIS**



**NOT THIS**

Site Selection



NOT THIS

Mostly flat - small vegetation

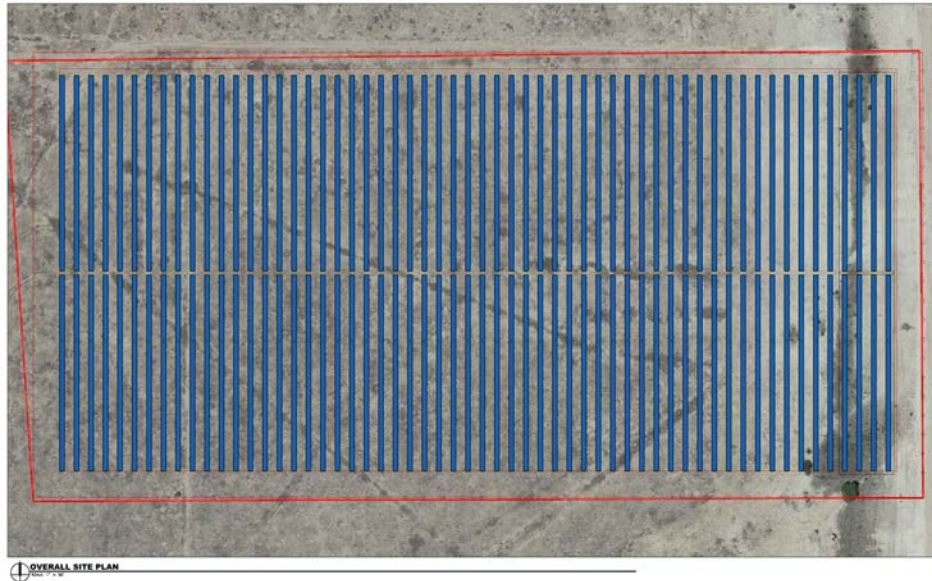


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## Site Selection

About 800'x2000'



OVERALL SITE PLAN

Long East/West or Square

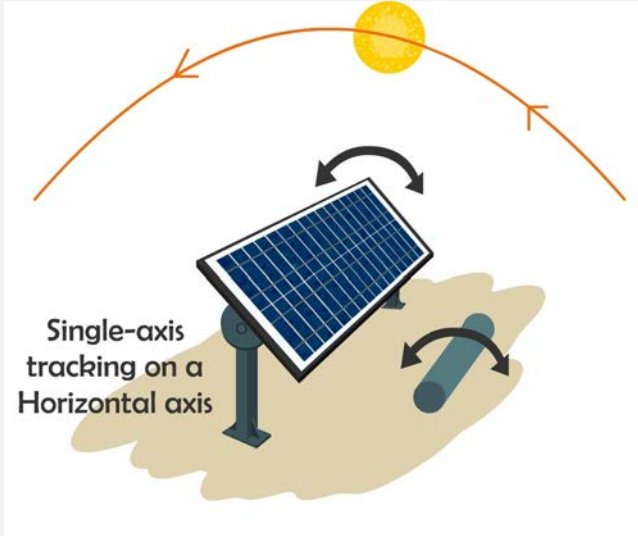
## Optimal Sites

About 1300'x1300'



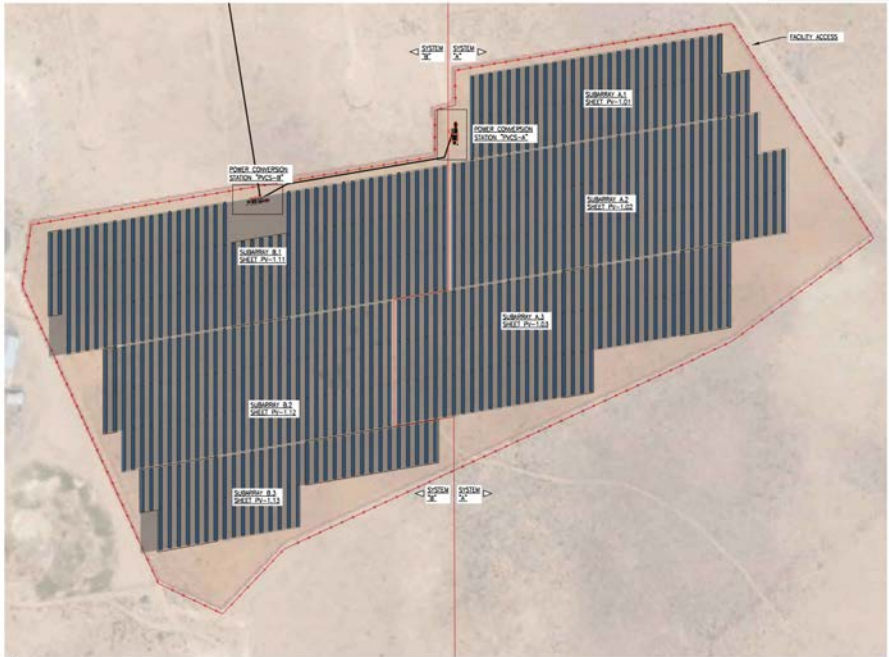
OVERALL SITE PLAN

# Why Single Axis Trackers



# Site Selection

# Less Optimal Sites



ARRAY SITE PLAN  
Scale: 1" = 100'



OVERALL SITE PLAN  
Scale: 1" = 100'

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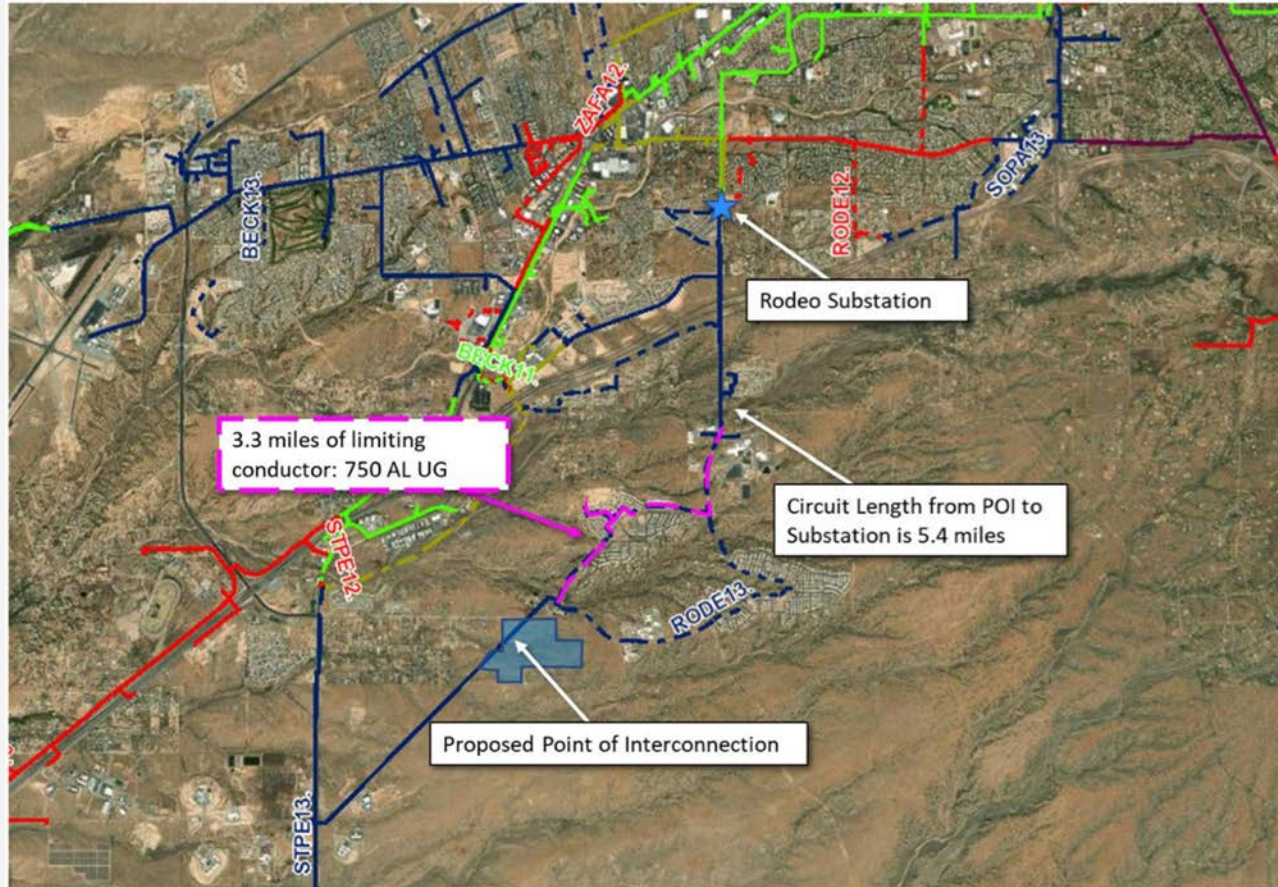
Operations & Maintenance

Definition:

**Pre-Apps** are to get preliminary “quick” feedback from utilities on viability for sites

**Interconnection Applications (ICAPs)** are to apply for permission to operate a system and to receive actual costs and timelines from the utility for any required system upgrades

## Interconnection Pre-Application



**Standard Timeline:**

15 Business Days

**Current Timeline:**

~4-5 Months

## Interconnection Application

### ESTIMATE OF SYSTEM IMPACT STUDY COSTS

Group	Activity	Contact		Costs Estimates
Distribution Planning	Study Report	C. Buck		20
System Engineering	Protection	R. Petersen		30
	Contract Management	A. Bueno		16
		Total PNM Hours		66
		Estimated Loaded Cost	(\$85/hr)	\$5,610
Consultant(s)	Conduct Study			\$40,000
		NMGRT	7.5%	\$3,421
	Deduct \$1000.00 Deposit			-\$1000.00
			<b>TOTAL</b>	<b>\$48,031</b>

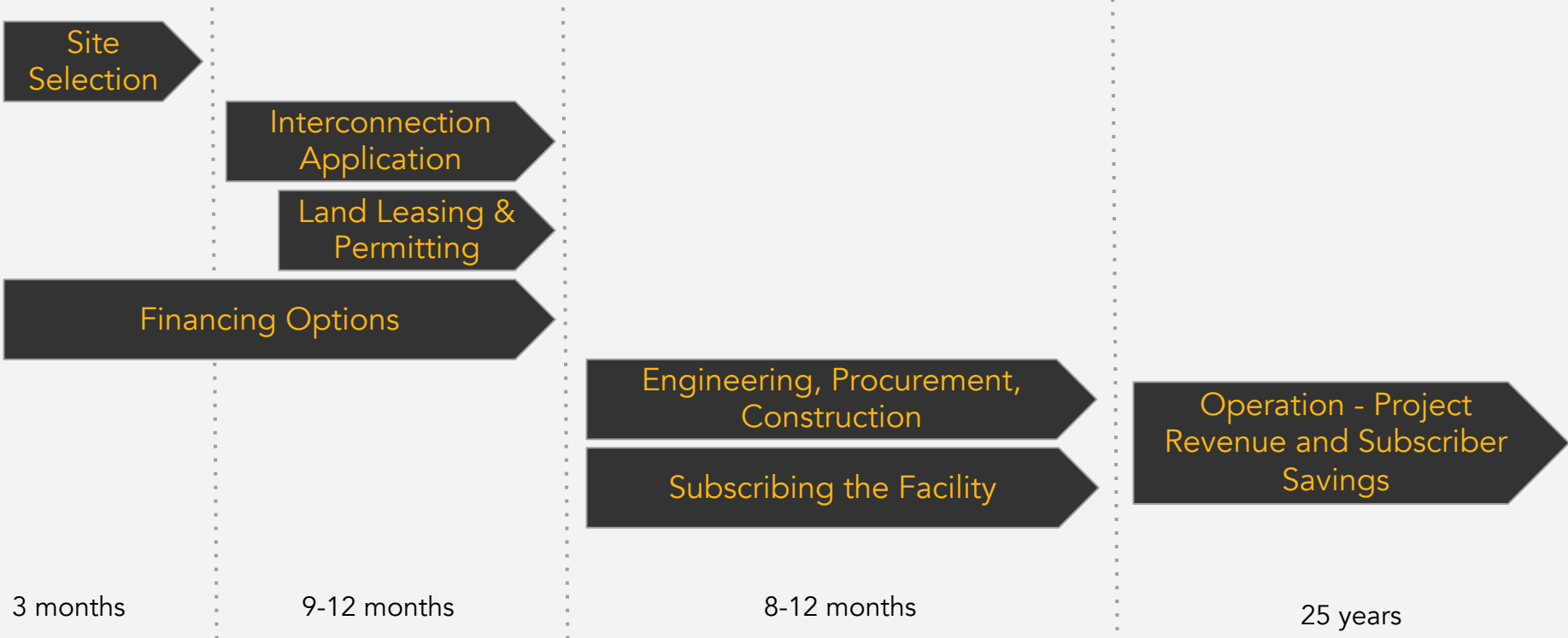
**Standard Timeline:**

60 Business Days

**Current Timeline:**

~5-12 Months

# Community Solar Development Timeline



3 months

9-12 months

8-12 months

25 years

Approximately 2 Years Until Project Operation - Could be January 2024



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Operations & Maintenance

## Definition:

Leasing and permitting will be dependent on the type of ownership structure selected for the community solar system.

If a PPA is selected - land will be leased by the system owner.

Permitting is typically taken care of by the Developer and/or EPC.



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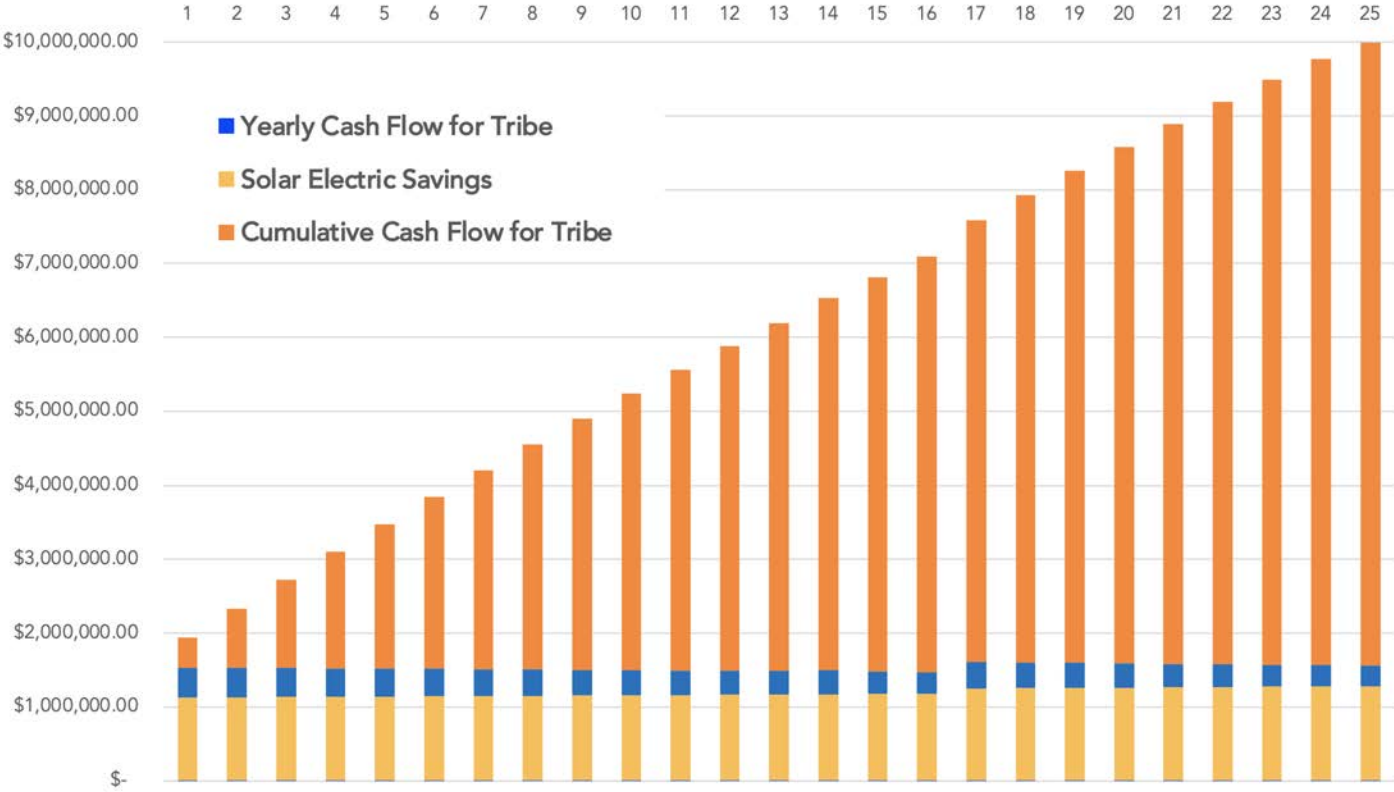
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Operations & Maintenance

Tribes can select any finance option that will best serve their interests. Options include:

- 100% Ownership supported by a DOE grant
- Partial Ownership with a 3rd party partner
- A power-purchase-agreement (PPA) with no money down.
- A PPA with a prep-payment
- Inverted Lease/Partnership Flip
- And more

# Potential Savings & Cash Flow



# Tribal Ownership Definitions & Possibilities

Land:

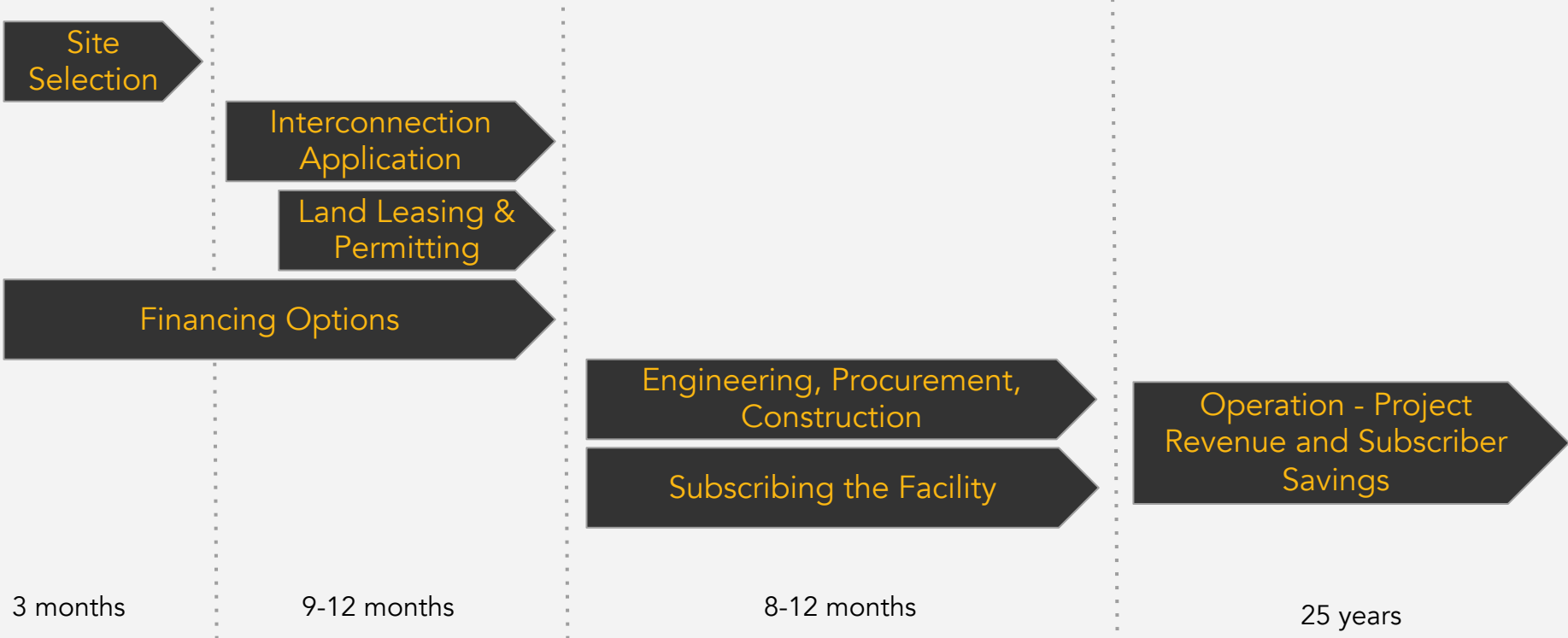
Solar Asset:

Solar Output:

Subscriptions:



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Operations & Maintenance

**Definition:**

**The design, engineering, and installation of the facility.**

**Engineering**

**Civil**

**Mechanical**

**Electrical**

## Engineering, Procurement, and Construction



**Job training opportunities such as:**

Journeyman Electricians

Laborers

Foreman

Supervisions

QC Inspectors

Project Managers

Equipment Operators

Electrical Helper

Estimators

Safety Specialists

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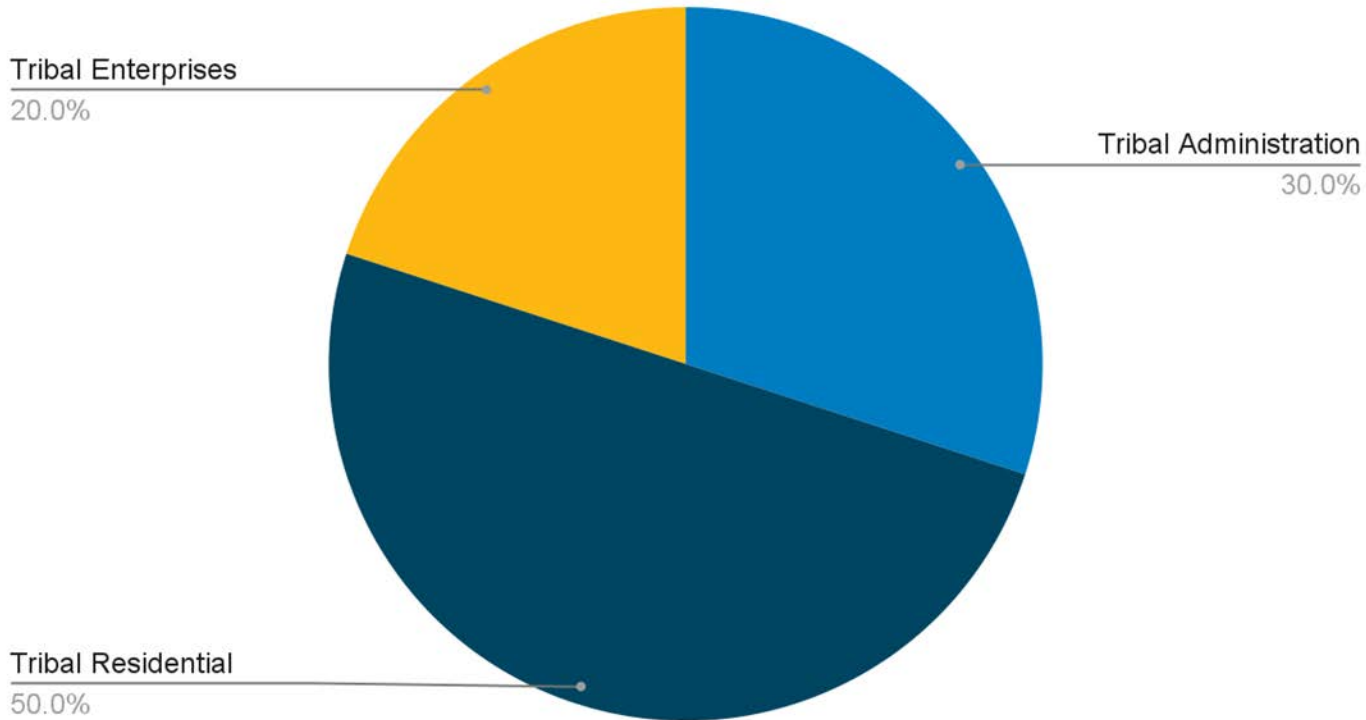
Operations & Maintenance

## Definition:

A Tribe can determine who they want the facility to serve. For example, 50% of the community solar array can provide energy for Tribal residences, 30% for Tribal administration, and 20% for Tribal enterprises, or whatever is most appropriate for the community,

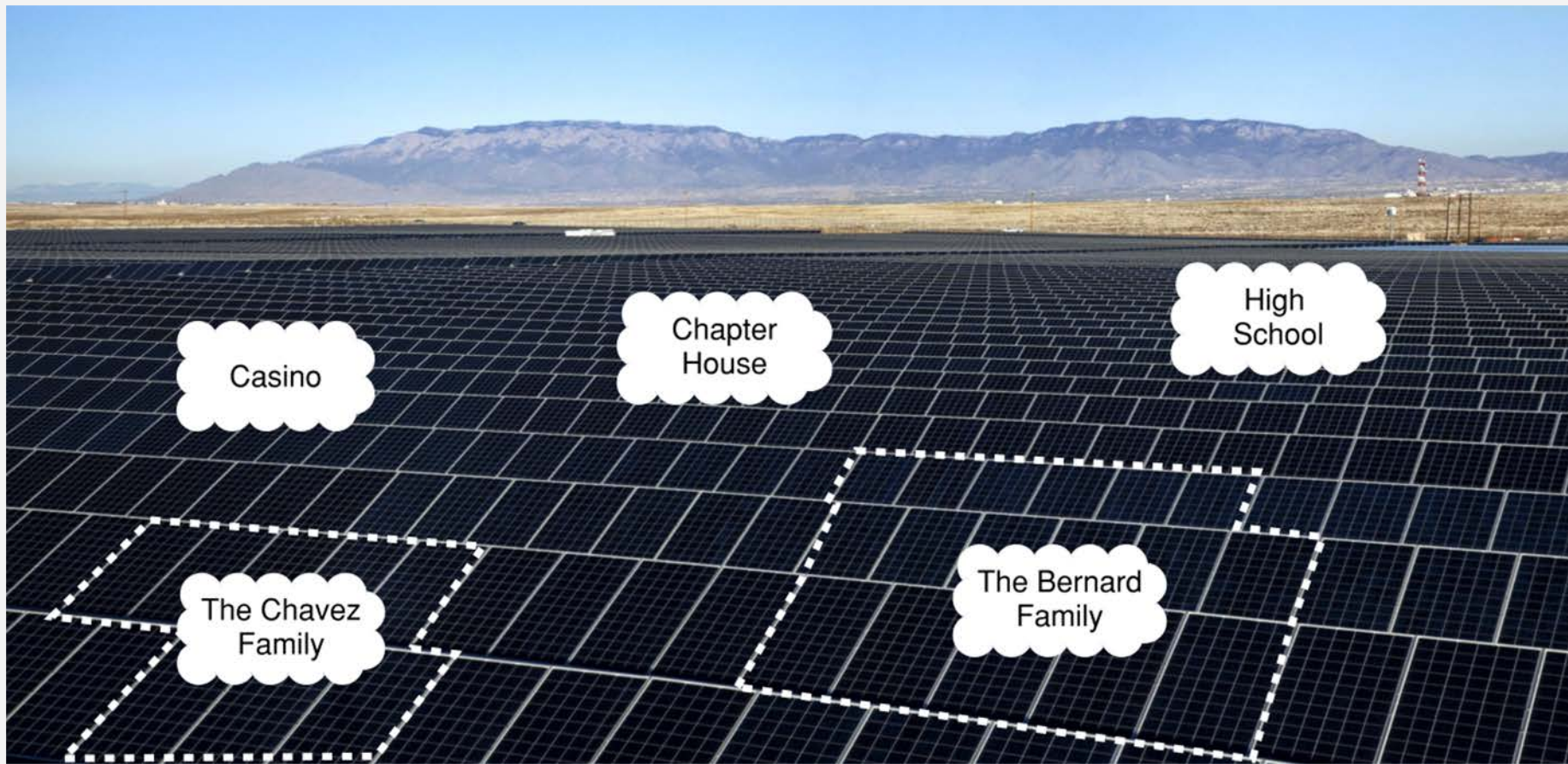
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## Subscription Possibilities





Subscribe the Facility



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Operations & Maintenance

## Definition:

The facility is operational, generating revenue for the Tribe and savings on electricity bills for all subscribers. The warranty life of the facility is ~25 years.

# Our Guiding Principles Working With Tribal Nations

Siting projects respectful of sacred cultural sites, land, and water

Gathering community feedback in project design to achieve the community vision

Providing transparent information about financial and ownership models that will best serve Tribal interests

Commitment to workforce development for Native communities, including a Native preference for hiring on Tribal land

Partnering with Tribal entities and Native-led organizations

Helping advance legislative and regulatory initiatives to support Tribal energy sovereignty

Required cultural-sensitivity trainings for Affordable Solar staff at all levels of project development, from creation to construction

**Thank you.**