

The Tonto Apache Tribe

Presents:

The Department of Energy (DOE) 2014/2015 Renewable Energy Grant Project "New Build"



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Grant Developer, TAT
Barry Coe
Principal, SRS



Presentation Outline

- Summary of Current Project Objectives
- Progress to date
- Timelines and goals
- Future Projects
- Next Steps



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Summary of Project Objectives

- Grant Program compliance
- Tribal Council Communications
- Budgets and Timelines (Updated Budget = \$779,993) & (1 YEAR)
- Energy modeling and technical support
- Design and Engineering
- Equipment Procurement
- Mobilization and staffing
- Proactive Project Management
- Interconnection
- Operations, Maintenance, and Asset Management long term



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Progress to Date

- Pre Engineering and technical support
- Energy modeling and systems sizes
- Grant Response
- Utility bill analysis
- Budget Verification Process



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Timelines & Goals

- Grant Compliance
- Budget Verification Process
- Construction Schedule
- Offset & savings goals-
 - The Smoke Shop – 100kW PV (85% bill offset)
 - The Water Treatment Plant – 66kW PV (85% bill offset)
 - The East Water Tower – 5kW (80%)
 - The GYM Pool – 40 Collectors (48% offset of Propane bill)



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PRE- ENGINEERING: Systems and layouts @ Smoke Shop 100kW (Option B)

Layout #1

G
A
S

135 MODULES
TOTAL DC KW=83.75

66kW located just south

Google

SMOKE SHOP : OPTION "B"
MODULES 250W X 400 / TOTAL DC KW = 100.0

		PRELIMINARY LAYOUT	
APPROVALS	DATE	TONTO APACHE TRIBE	
DESIGNER	DATE	DC STC PHOTOVOLTAIC SYSTEM	
CHECKER	DATE	DRAWING NO.	SCALE
DESIGNER	DATE	PROJECT	NTS
PROJECT	DATE	SHEET 1 OF 7	

(264) Renesola 156 series (250 watts)
TOTAL = 66kw DC

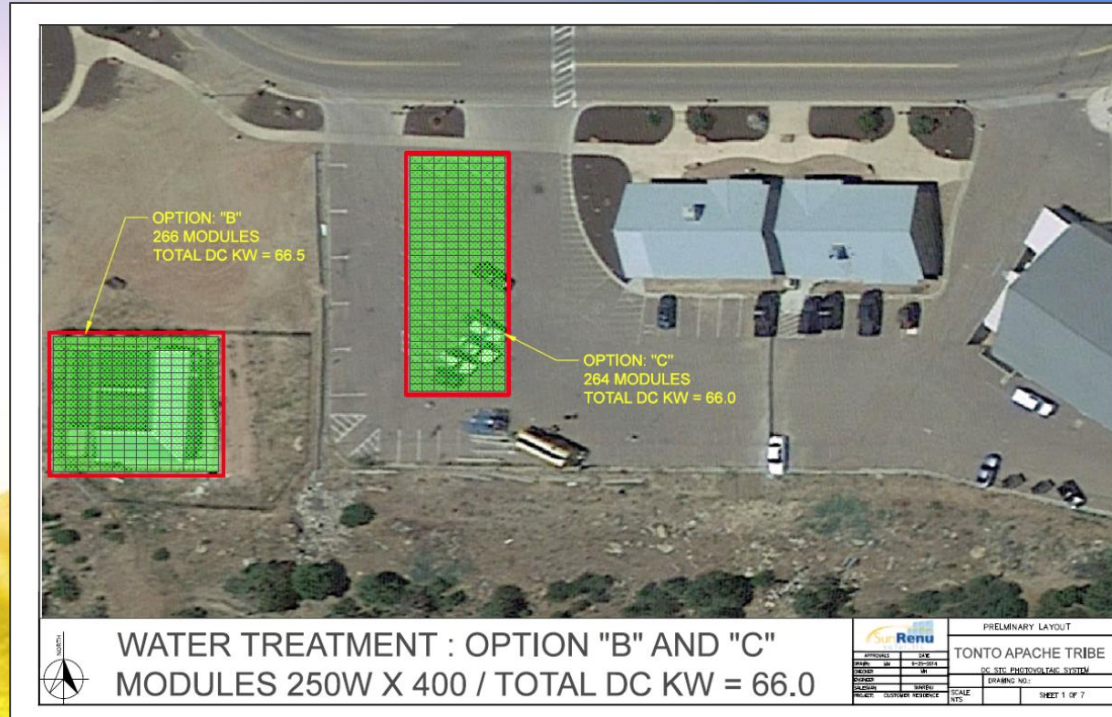
		PRELIMINARY LAYOUT	
APPROVALS	DATE	TONTO APACHE RESERVATION	
DESIGNER	DATE	DC STC PHOTOVOLTAIC SYSTEM	
CHECKER	DATE	DRAWING NO.	SCALE
DESIGNER	DATE	PROJECT	NTS
PROJECT	DATE	SHEET 1 OF 7	



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PRE ENGINEERING: Systems and layouts @ Water Treatment Plant 66kW (Option C only) Includes LED Lighting



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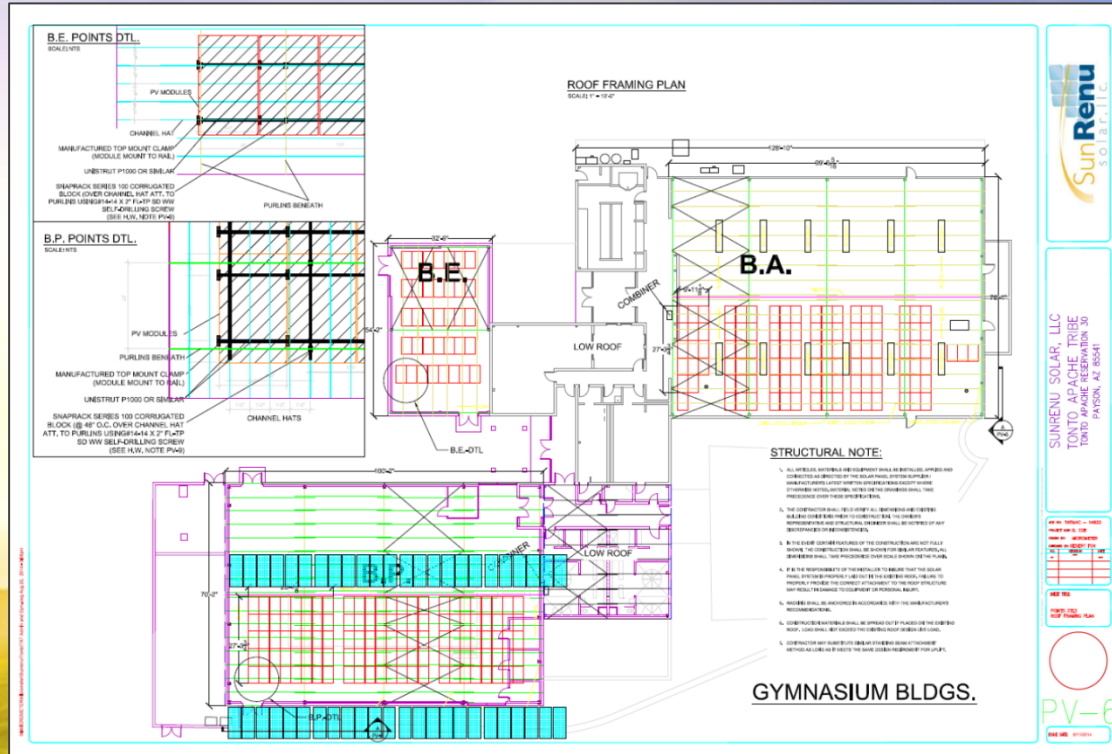
PRE ENGINEERING: Systems Layouts @ East Water Tower 5kW



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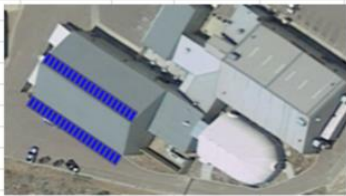


PRE ENGINEERING: Systems Layout@ GYM POOL 40 Collectors



Project Description
OG-100 SRCC Rated solar thermal system, Solar Hot Water Flat Plate Collectors & Hot Water Storage, 40"x10 Glazed Flat Plate

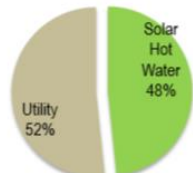
Estimated Solar Thermal/Water Heating Layout and Aerial



MONTH	Therm Usage	Therm Spend \$
January	3653	\$7,565
February	2382	\$5,075
March	3128	\$6,685
April	2059	\$4,386
May	1745	\$3,471
June	1318	\$2,629
July	706	\$1,423
August	759	\$1,527
September	654	\$1,319
October	933	\$1,870
November	983	\$1,966
December	1893	\$4,142

PROPANE GAS - SOLAR THERMAL/WATER HEATING

40 Collectors



Utility 52%
Solar Hot Water 48%



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Future Projects

- Casino energy efficiency – Large Community Scale
- LED/Energy Efficient Lighting casino and tribal offices (exterior and interior)
- Casino Photovoltaics
- Casino Thermal – Hotel and indoor pool



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Next Steps

- Final Budget Verification
- Contracts
- Full Design and Engineering
- “Go NO Go” Bench Mark – TAT & DOE
- Notice to Proceed with Construction
- Equipment Procurement
- Utility Documentation Process and Management
- Mobilization



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Closing Statements and Q&A:

THANK YOU!



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