



WIND FEASIBILITY STUDY; COMMUNITY-SCALE PV SYSTEM INSTALLATION

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OVERVIEW

- ▶ BACKGROUND INFO ON STANDING ROCK
- ▶ WIND ASSESSMENT STUDY
- ▶ WIND FEASIBILITY STUDY
- ▶ COMMUNITY SCALE PV INSTALLATION
- ▶ OTHER PROJECTS:
- ▶ CONCLUSION
- ▶ LESSONS LEARNED



STANDING ROCK

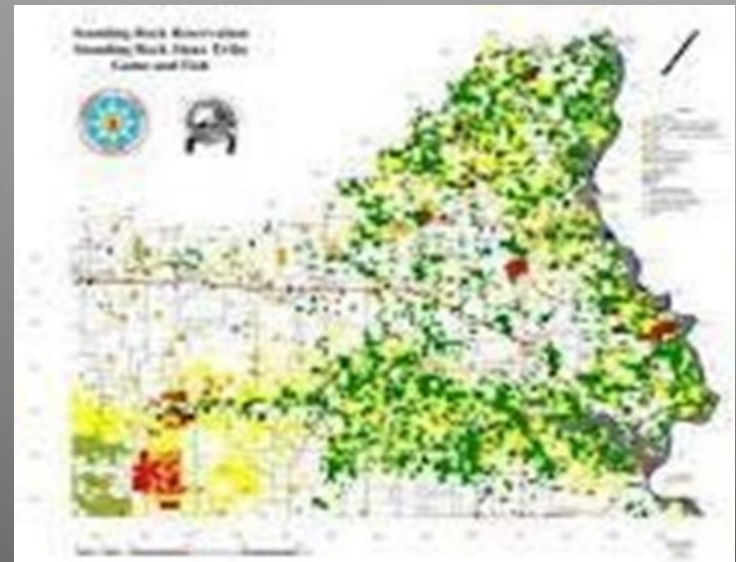


- ▶ ONE OF SEVEN BANDS OF THE GREAT SIOUX NATION
- ▶ LOCATED IN SOUTH CENTRAL NORTH DAKOTA & NORTH CENTRAL SOUTH DAKOTA
- ▶ SIOUX COUNTY ND; CORSON COUNTY SD; AND SMALL PORTIONS OF ZIEBACH & DEWEY COUNTIES IN SD
- ▶ RESERVATION DIRECTLY TO THE SOUTH IS CHEYENNE RIVER SIOUX TRIBE

STANDING ROCK



- ▶ LAND
 - ROLLINGS HILLS, RIVER VALLEYS, WOODLANDS, & LAKES
- ▶ CHECKERBOARD OWNERSHIP
- ▶ 2,320,247 ACRES
- ▶ 700,000 TRIBAL LAND, HAS INCREASED DUE TO LBBP
- ▶ LOST NEARLY 560,000 ACRES DUE TO THE PICK-SLOAN FLOOD CONTROL ACT OF 1944



STANDING ROCK



- ▶ DAKOTA
 - HUNKPATINA & CUTHEAD – YANKTONAI
- ▶ LAKOTA
 - HUNKPAPA & BLACKFEET

STANDING ROCK SIOUX TRIBE



▶ ORGANIZATIONS

- CHAIRMAN, VICE-CHAIRMAN, SECRETARY
- 8 DISTRICT REPRESENTATIVES
- 6 AT-LARGE REPRESENTATIVES

▶ LEADERSHIP SEPARATED INTO 3 COMMITTEES

- JUDICIAL
- ECONOMICS
- HEALTH, EDUCATION & WELFARE
- EACH PROGRAM DIRECTOR REPORTS TO ASSIGNED COMMITTEE ON A MONTHLY BASIS
- **LOOK 7 GENERATIONS INTO THE FUTURE: HOW WILL OUR DECISIONS TODAY AFFECT FUTURE GENERATIONS?**

SRST LEADERSHIP



▶ ENERGY DEVELOPMENT

◦ RESOLUTIONS STATEMENTS:

- TO DIVERSIFY ENERGY SOURCES (BOTH RENEWABLE & NON-RENEWABLE)
- TO DIVERSIFY ECONOMIC RESOURCES
- TO ADMINISTER SERVICES THAT MAY CONTRIBUTE TO THE SOCIAL & ECONOMIC ADVANCEMENT OF THE TRIBE AND ITS MEMBERS

WIND ASSESSMENT STUDY



- ▶ FUNDED BY DOI
- ▶ WORKED TO ASCERTAIN THE BEST LOCATION FOR A WIND FARM
- ▶ CRITERIA BASED ON:
 - ACCESSIBILITY
 - PROXIMITY TO SUB-STATIONS OR TRANSMISSION LINES
 - AVAILABILITY OF TRIBAL TRUST OR TRIBAL FEE LAND
 - WIND DATA TAKEN FROM MET TOWER IN ELGIN ND
 - SECONDARY: “WHERE’S THE WIND”

WIND FEASIBILITY STUDY



- ▶ THE 2ND STEP IN THE VISION FOR A COMMERCIAL WIND FARM ON STANDING ROCK
- ▶ 2 50 METER MET TOWERS ARE NOW LOCATED ON THE SHERWOOD HILL SITE
- ▶ BUSINESS PLAN:
 - WIND ENERGY TAX CREDITS
 - BUSINESS MODELS
- ▶ WHAT IS BEST FOR STANDING ROCK?

WIND FEASIBILITY STUDY



- ▶ YEAR-LONG MONITORING BEGAN IN JANUARY 2013
- ▶ DESK STUDIES COMPLETED – GEOLOGIC SETTING, POTENTIAL AVIAN IMPACTS
- ▶ PRELIMINARY INTERCONNECTION INDICATES CHALLENGES IN GETTING POWER TO MARKET

WIND FEASIBILITY



- ▶ PROBLEM: NEPA REQUIREMENTS/THPO CLEARANCE
- ▶ PROBLEM: TRANSMISSION
 - WE HAVE ENTERED INTO NDA WITH SEVERAL COMPUTER DATA CENTERS
 - SOLVES INTERCONNECTION PROBLEM
 - SATISFIES PUBLIC REVIEW (USE POWER LOCALLY)
 - POTENTIAL FOR JOB CREATION

COMMUNITY SOLAR PV INSTALLATION



- ▶ CURRENTLY IN PROCESS...
- ▶ COST SHARE STRUCTURE:
 - NEW LLC JOINTLY OWNED BY SRST & SUNVEST INVESTORS
 - SUNVEST SOLAR (THROUGH SUNVEST INVESTORS) CONTRIBUTES THE 50% COST SHARE TO THE PROJECTS, SO NO INITIAL COST SHARE BY SRST
 - TRIBE CONTRIBUTES DOE GRANT
 - SUNVEST INVESTORS QUALIFY FOR 30% FEDERAL INVESTMENT TAX CREDIT AND DEPRECIATION OF SOLAR PV ASSETS
 - SUNVEST PROVIDES TRIBE CREDIT FOR VALUE OF INVESTMENT TAX CREDIT. BALANCE OF SYSTEM COST IS PAID OVERTIME BY SRST AT RATE AT OR BELOW EXISTING PAYMENTS TO UTILITY PROVIDER

COMMUNITY SOLAR PV INSTALLATION



- ▶ **PROJECT IMPACT:**
 - REDUCE CARBON FOOTPRINT
 - BECOME MORE ENERGY INDEPENDENT
 - GAIN VALUABLE EDUCATIONAL BENEFITS FOR EVERY LEVEL OF SCHOOLS ON THE RESERVATION
- ▶ **PROJECT GOALS:**
 - TO DEPLOY CLEAN ENERGY AT A COMMUNITY SCALE ON SRST

COMMUNITY SOLAR PV INSTALLATION



▶ KEY TAKE AWAY

- STRUCTURE OF DEAL IS DESIGNED TO MAXIMIZE DOE GRANT FUNDS TO DEPLOY MORE SOLAR PV THROUGH UTILIZATION OF GRANT FUNDS & PRIVATE TAX FINANCING TO MAKE RENEWABLE ENERGY MORE COST EFFECTIVE FOR SRST

COMMUNITY SOLAR PV INSTALLATION



- ▶ POWER PURCHASE AGREEMENT
- ▶ AFTER SOLAR PV SYSTEM IS OPERATIONS, SAVINGS WILL BE PAID IN A PPA UNTIL THE BALANCE OF THE SYSTEM IS PAID FOR.
- ▶ AT THE END OF THE PPA TERM, THE OWNERSHIP OF THE SYSTEM WILL “FLIP” TO SRST
- ▶ PROBLEMS: WHERE DO WE PUT THE PV PANELS?

LESSONS LEARNED



- ▶ FRUSTRATION – DEVELOPING IN INDIAN COUNTRY...
- ▶ SURROUNDING WIND FARMS
- ▶ LOCAL BIA SRA FIELD OFFICE (LACK OF ENERGY EXPERIENCE)
- ▶ RENEWABLE ENERGY & ENERGY DEVELOPMENT OFFICE
- ▶ CREATION OF ENERGY & MINERAL MANAGER
- ▶ STRATEGIC PLANNING

ADDITIONAL PROJECTS



- ▶ OCETI SAKOWIN POWER PROJECT
 - 7 COUNCIL FIRES
 - SRST, CRST, CROW CREEK SIOUX TRIBE, ROSEBUD SIOUX TRIBE, OGLALA SIOUX TRIBE, FLANDREAU SANTEE SIOUX TRIBE, SISSETON WAPEHTONSIOUX TRIBE, YANKTON SIOUX TRIBE
 - TRIBES WILL COMBINE THEIR EFFORTS & RESOURCES TO BUILD A UTILITY SCALE 1GW+ WIND POWER GENERATION & TRANSMISSION SYSTEM THAT WILL SELL POWER TO OUT OF STATE BUYERS

ADDITIONAL PROJECTS



- ▶ **STANDING ROCK RENEWABLE ENERGY**
 - INITIAL FUNDING – WALLACE GLOBAL FUNDS (AWARD GIVEN TO CHAIRMAN ARCHAMBAULT II)
 - WORKING WITH PHILANTHROPIC INVESTORS TO RAISE THE FUNDS FOR PRE-DEVELOPMENT FUNDING
 - RAISING THE PRE-DEVELOPMENT FUNDING WILL REDUCE THE INITIAL RISK THAT SRST WOULD HAVE TO TAKE
 - AIMING TO BEGIN CONSTRUCTION BY END OF YEAR 2019 (GO – NO GO)

ADDITIONAL PROJECTS



▶ GRID ALTERNATIVES

- IN SUMMER OF 2017 INSTALLED A SOLAR PV SYSTEM AT A HOME IN FORT YATES ND
- PARTNERING ON THE SOLAR PV PROJECT TO PROVIDE JOB TRAINING

ADMINISTRATIVE DIRECTIVES



- ▶ OIL & GAS PREPARATION WORKING GROUP
- ▶ ENERGY LEADERSHIP
- ▶ STRATEGIC PLANNING

ANY QUESTIONS/COMMENTS



- ▶ “LET US PUT OUR MINDS TOGETHER TO SEE WHAT WE CAN BUILD FOR OUR CHILDREN.”
- ▶ TATANKA IYOTAKE
- ▶ HUNKPAPA LAKOTA MEDICINE MAN
- ▶ SITTING BULL

