



# WIND FEASIBILITY STUDY; COMMUNITY-SCALE PV SYSTEM INSTALLATION

FAWN WASIN ZI (WASHEE ZEE)  
ENERGY & MINERAL MANAGER  
LAND OPERATIONS OFFICER  
[FWASINZI@STANDINGROCK.ORG](mailto:FWASINZI@STANDINGROCK.ORG)  
701-854-8540 X8639

# OVERVIEW

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



# STANDING ROCK

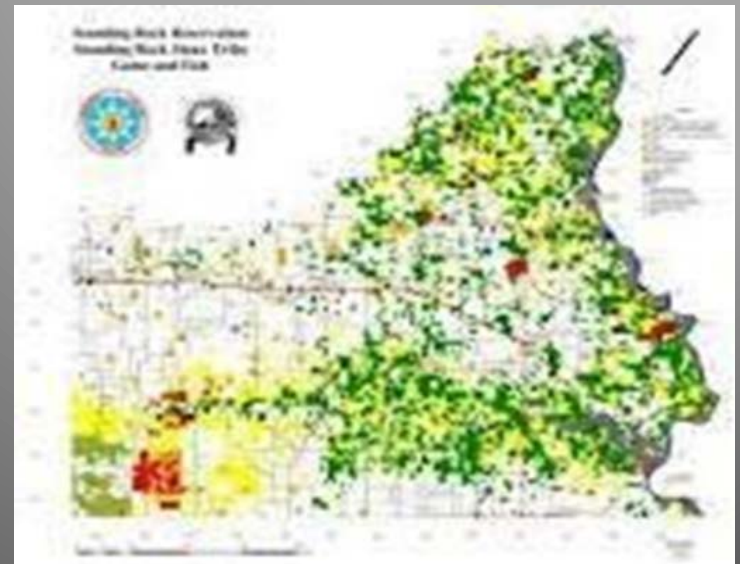


- ▶ ONE OF SEVEN BANDS OF THE GREAT SIOUX NATION
- ▶ LOCATED IN SOUTH CENTRAL NORTH DAKOTA & NORTH CENTRAL SOUTH DAKOTA
- ▶ SIOUX COUNTY ND; CORSON COUNTY SD; AND SMALL PORTIONS OF ZIEBACH & DEWEY COUNTIES IN SD
- ▶ RESERVATION DIRECTLY TO THE SOUTH IS CHEYENNE RIVER SIOUX TRIBE

# 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 GENERATIONS INTO THE FUTURE: HOW WILL OUR DECISIONS TODAY AFFECT FUTURE GENERATIONS?**

# SRST LEADERSHIP



## ▶ ENERGY DEVELOPMENT

### ◦ RESOLUTIONS STATEMENTS:

- TO DIVERSIFY ENERGY SOURCES (BOTRH 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 2<sup>ND</sup> 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

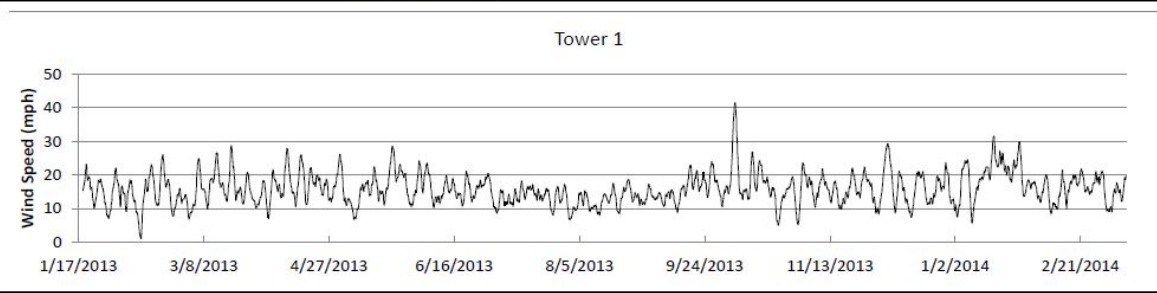
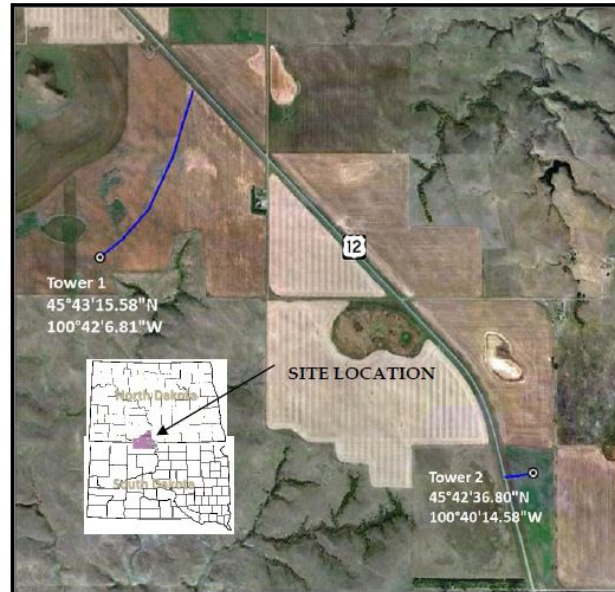
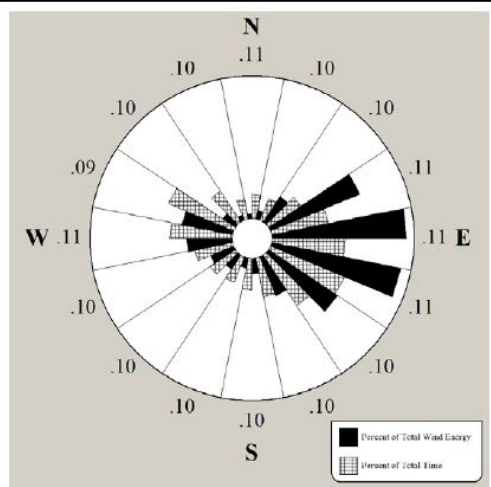


- ▶ YEAR-LONG MONITORING BEGAN IN JANUARY 2013
- ▶ DESK STUDIES COMPLETED – GEOLOGIC SETTING, POTENTIAL AVIAN IMPACTS
- ▶ PRELIMINARY INTERCONNECTION INDICATES CHALLENGES IN GETTING POWER TO MARKET

# WIND FEASIBILITY



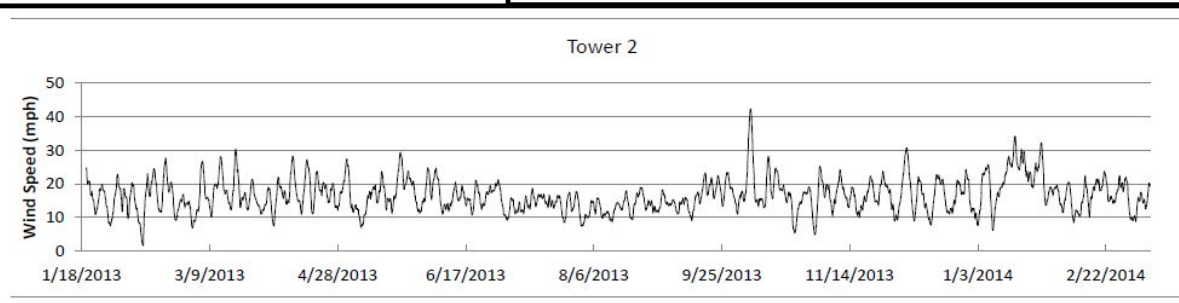
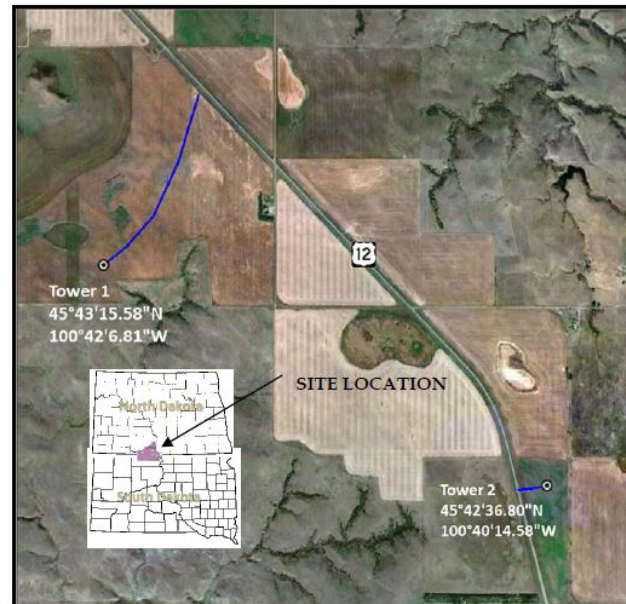
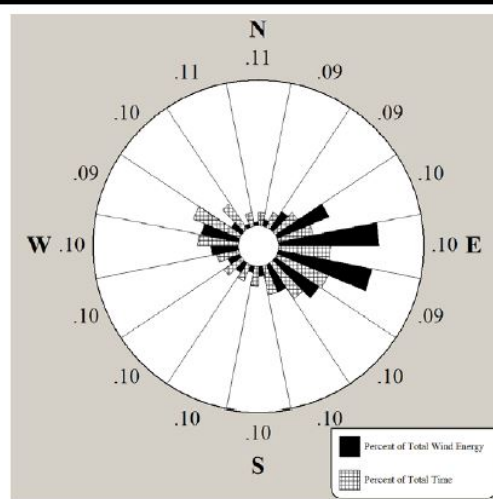
Project Name: SRST Wind Monitoring  
Site Name: Tower 1  
Period of Report: 01/17/2013 to 03/11/2014  
Average Wind Speed: 15.83 mph



# WIND FEASIBILITY



Project Name: SRST Wind Monitoring  
Site Name: Tower 2  
Period of Report: 01/18/2013 to 03/11/2014  
Average Wind Speed: 16.54 mph



# 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



- ▶ THE SRST WILL PARTNER WITH ND SOLAR INVESTMENTS, LLC TO INSTALL 636 KW OF SOLAR PHOTOVOLTAIC SYSTEMS AT FIVE SITTING BULL COLLEGE BUILDINGS IN SIOUX COUNTY ND.
- ▶ PROJECT WILL PROVIDE SOLAR POWER TO THE MAIN ADMINISTRATIVE & ACADEMIC BUILDINGS ON THE SITTING BULL COLLEGE CAMPUS

# 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

## ▶ ELECTRIC OFFSET

- 42.6% CLEAN ENERGY OFFSET OF ELECTRICAL CONSUMPTION AT THE SBC SITE

# 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

# 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



## ▶ GRID ALTERNATIVES

- IN SUMMER OF 2017 INSTALLED A SOLAR PV SYSTEM AT A HOME IN FORT YATES ND
- SUMMER OF 2018 – PLAN ON INSTALLING SOLAR PV ON A COMMUNITY-TYPE BUILDING

# GRID ALTERNATIVES



# ADDITIONAL PROJECTS



- ▶ **NEW ADMINISTRATION**
  - TO CONTINUE THE “NO DAPL, CLEAN WATER FIGHT”
  - LOOK INTO FUNDING A SOLAR PV SYSTEM THAT WILL OFF-SET THE ELECTRIC USAGE AT SRST MR&I TREATMENTS SYSTEMS

# ADMINISTRATIVE DIRECTIVES



- ▶ OIL & GAS PREPARATION WORKING GROUP
- ▶ NEW GRANT COMMITTEE (CFO, ADMINISTRATION, CONTRACTING...)
- ▶ ENERGY LEADERSHIP



# 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

