Pumped Hydro Webinar

CIRI Energy, LLC

November 12, 2020
Phase I Project History

- Fire Island Wind, LLC a wholly owned subsidiary of Cook Inlet Region, Inc.)

- Southcentral Alaska’s first utility-scale wind project

- Located on Fire Island, near Railbelt load center, three miles west of Anchorage

- First power September 2012

- Chugach Electric Association Power Purchase Agreement: 25-year term
Company History

- Fire Island was designed for 33 turbines laid out in three strings, each consisting of 11 turbines
- Phase I was chosen to provide the 17.6 MW project comprised of 11 GE 1.6 XLE wind turbine generators
- 33.0% Net Capacity Factor (NCF)
- P50 = 51,000 MWh
Phase I Project Performance

• Benefits realized: >400,000 MWh LTD (thru Oct 2020)
  >3,346,747 Mcf of NG burn avoided
  ~183,629 Metric Tons of CO2 not emitted

• Turbine Availability:
  99.76% - Including planned maintenance outages
  No significant mechanical issues
Phase I Production - LTD

- **Budget**
  - 2013: 49,531
  - 2014: 47,466
  - 2015: 50,172
  - 2016: 55,583
  - 2017: 47,373
  - 2018: 51,368
  - 2019: 47,841
  - 2020: 19,506
  - 2021: 52,203

- **Actual**
  - 2013: 49,531
  - 2014: 47,466
  - 2015: 50,172
  - 2016: 55,583
  - 2017: 47,373
  - 2018: 51,368
  - 2019: 47,841
  - 2020: 29,157
  - 2021: 52,203

**MWh Production**
Phase II - Proposed

- 20.35 MW project
- “B String” flanks the east ridgeline of island
- 30.7% Net Capacity Factor (NCF)
- 11 upgraded wind turbines
- P50 = 53,900 MWh
- Could add “C String” as well
Phase II - Proposed

Fire Island Wind Project
Monthly Combined Production
MWh

MWh P50 - Phase I  MWh P50 - Phase II
Phase II - Timeline

• Negotiate PPA
• Approval of PPA by RCA

• Construction RFP
• TSA contract
• Construction contract
• NTP for contractors

• May-start construction
• September-Completion
• September-Commissioning
• October -COD
Phase II - Benefits

- **Reduced capital requirement for Phase II:**
  - Transmission capacity available
  - Utilizes existing roads
  - Switchgear
  - O & M Facility
  - Project Labor and Equipment

- **Simple to contract:**
  - PPA template – previously approved by RCA
  - Interconnection agreement
  - Turbine supply
  - Financing
Phase II – Take Aways

• FIW Phase II - Shovel Ready
• Could be built in less than 1 year

• Power Off-take
  – Price is competitive with gas-fired generation
  – Future tax savings uncertain, but turbine pricing lower
  – Optimizes state investment in transmission
  – Reduces system emissions
  – Moves us closer to State’s 50% renewable goal

• Pumped hydro could provide a sync for wind energy and ancillary services for the grid
  • Could enable higher renewable penetration
CIRI Energy, LLC
Active investor
Alaska and USA

- Wind
- Gas storage
- Gas-fired power
- Biomass