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ADD: Marlayna Doell, Sarah Achten, Anne Fream, Mary Neely

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NextEra Energy Duane Arnold, LLC; Duane Arnold Energy Center; Post-Shutdown Decommissioning Activities Report; Reopening of Comment Period

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Comment on FR Doc # 2021-04631

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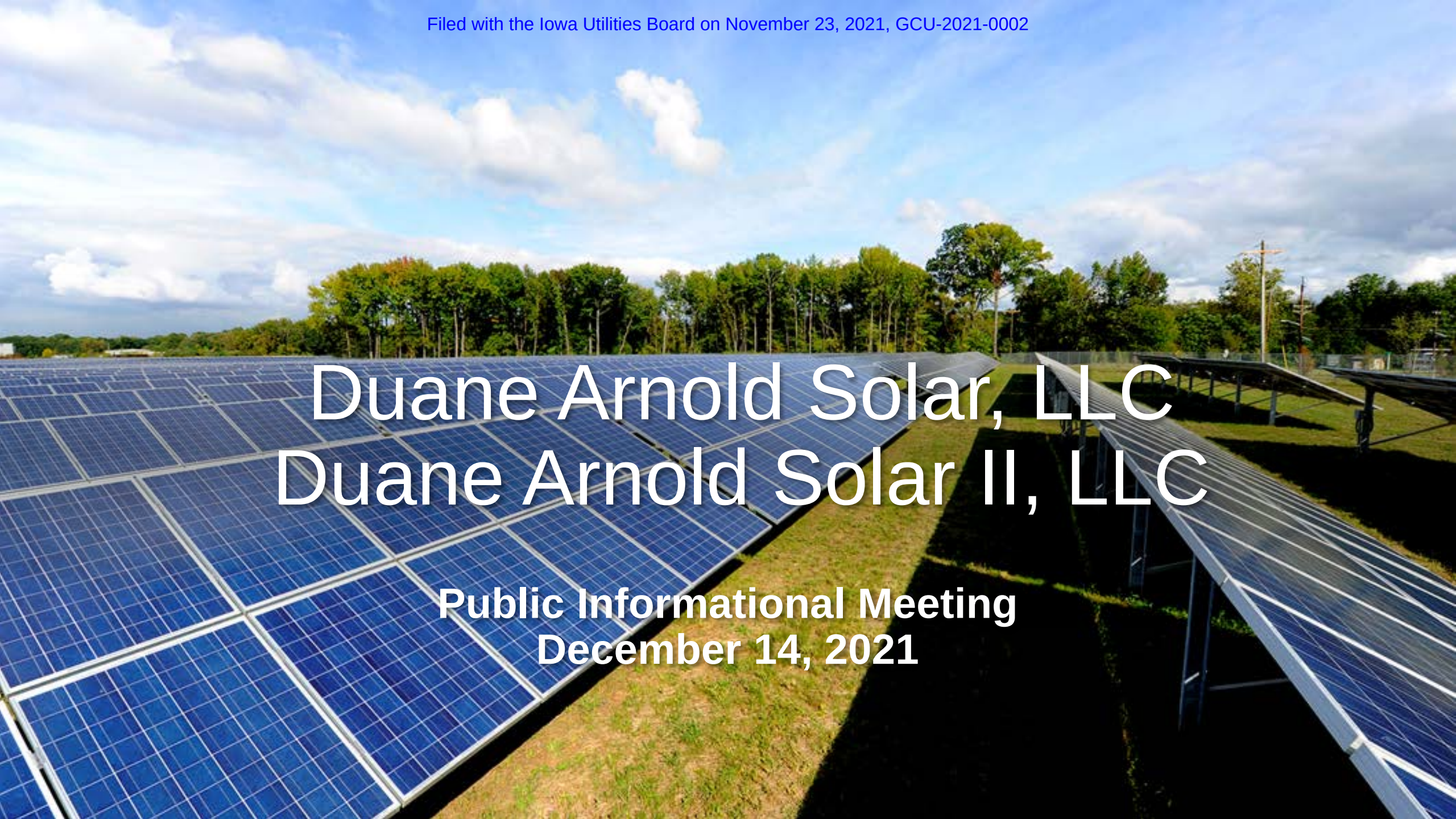
General Comment

See attached file(s)

Attachments

Informational Meeting Presentation_2077488_211123-090018

Decommision Report Comments 122021



Duane Arnold Solar, LLC
Duane Arnold Solar II, LLC

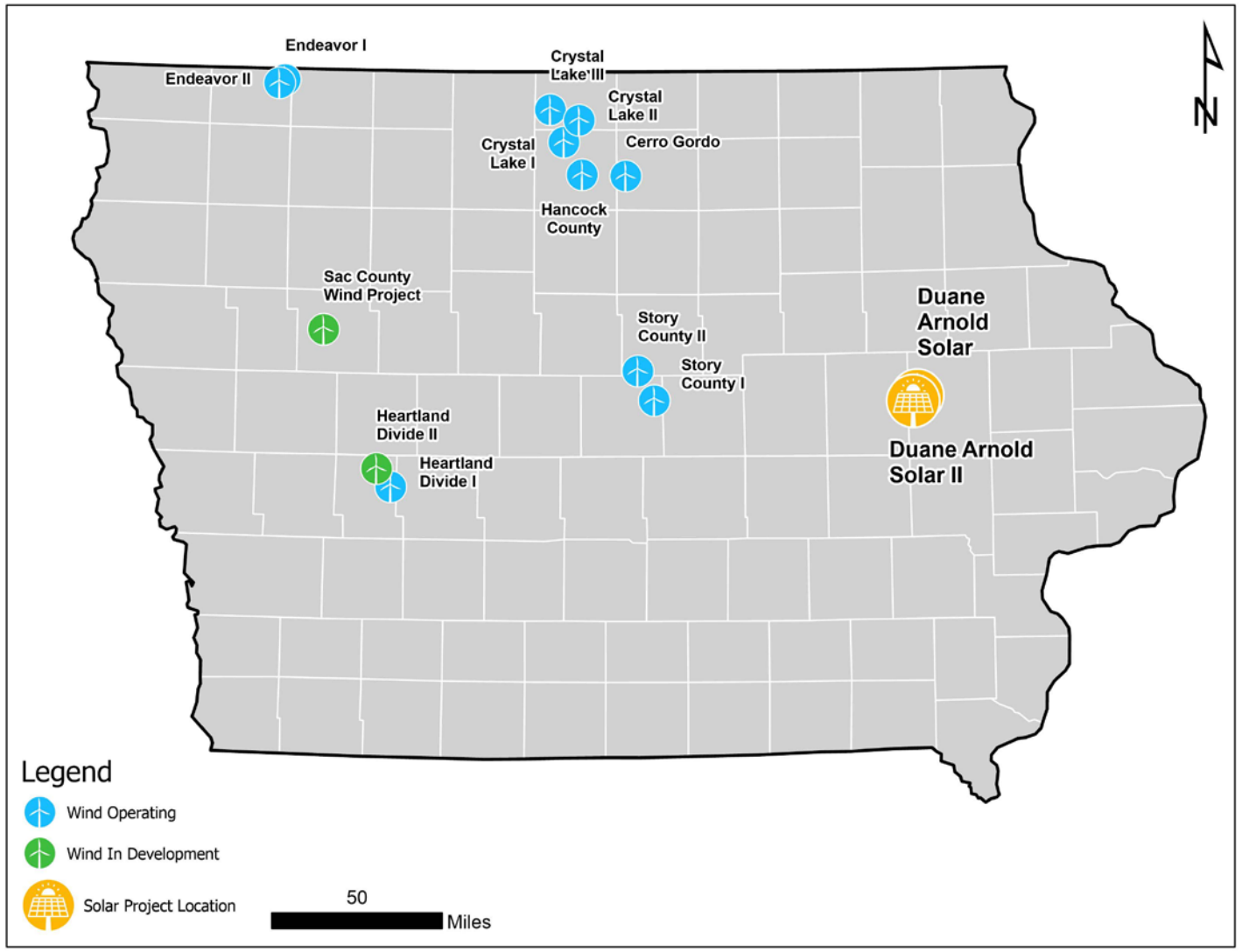
Public Informational Meeting
December 14, 2021

Duane Arnold Solar, LLC and Duane Arnold Solar II, LLC

- Duane Arnold Solar, LLC and Duane Arnold Solar II, LLC are wholly-owned indirect subsidiaries of NextEra Energy Resources, LLC (NEER)
- As of December 31, 2020, NEER, through its affiliated entities, is the world's largest generator of renewable energy from the wind and sun, generating approximately 23,370 MW of net generating capacity across 38 states and 520 MW of net generating capacity in 4 Canadian provinces

Over $2.0 Billion invested in Iowa since 1999

Cerro Gordo Wind	40.5 MW
Crystal Lake I	150 MW
Crystal Lake II	200 MW
Crystal Lake III	66 MW
Endeavor I	100 MW
Endeavor II	50 MW
Hancock County	97.6 MW
Heartland Divide I	103.5 MW
Heartland Divide II*	200 MW
Story County I	150 MW
Story County II	150 MW
Sac County Wind*	80 MW
Generation Repair & Services	Story County, IA
Iowa Training Facility	Polk County, IA



Project Development and Ownership

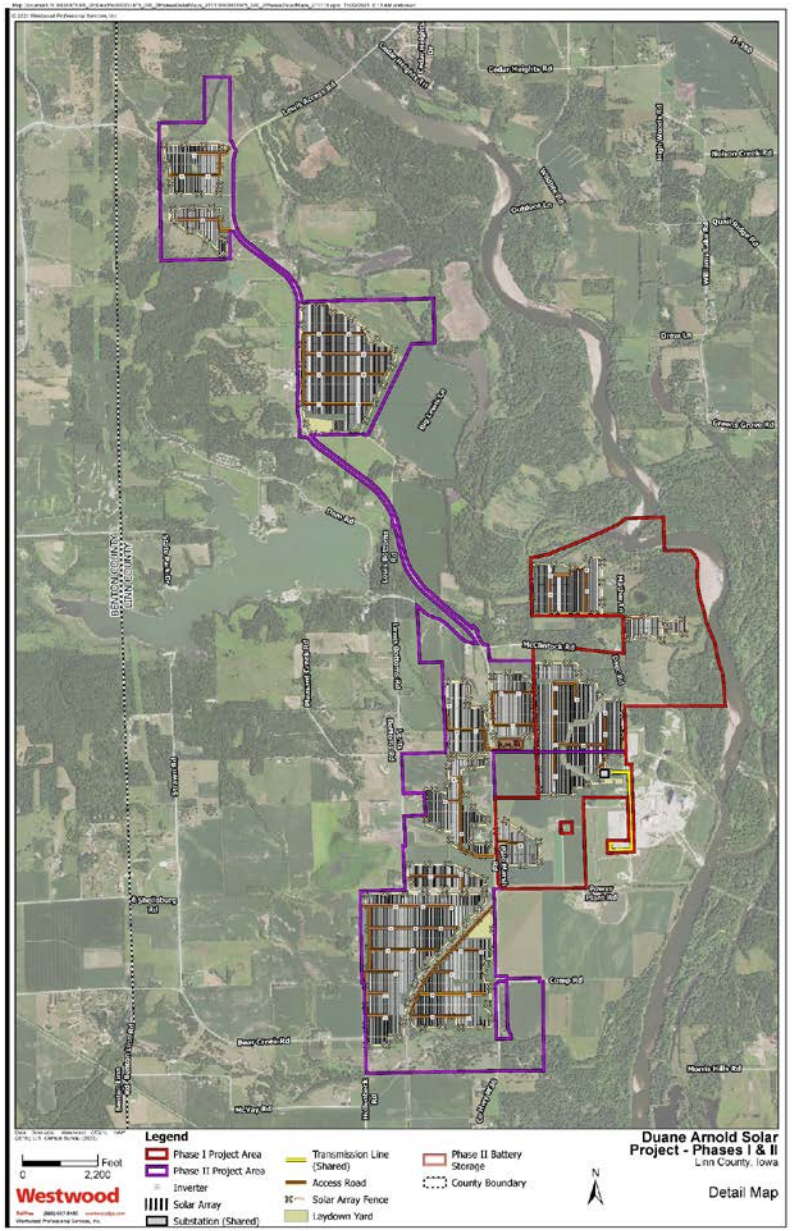
- Duane Arnold Solar, LLC and Duane Arnold Solar II, LLC will develop, design, permit, and construct Phases I and II of the Project

- Alliant Energy, through its subsidiary Interstate Power & Light Company (IPL), will purchase the Projects and distribute the renewable energy to its customers, including Iowa residents

Duane Arnold Solar Phases I and II: Site Selection Drivers

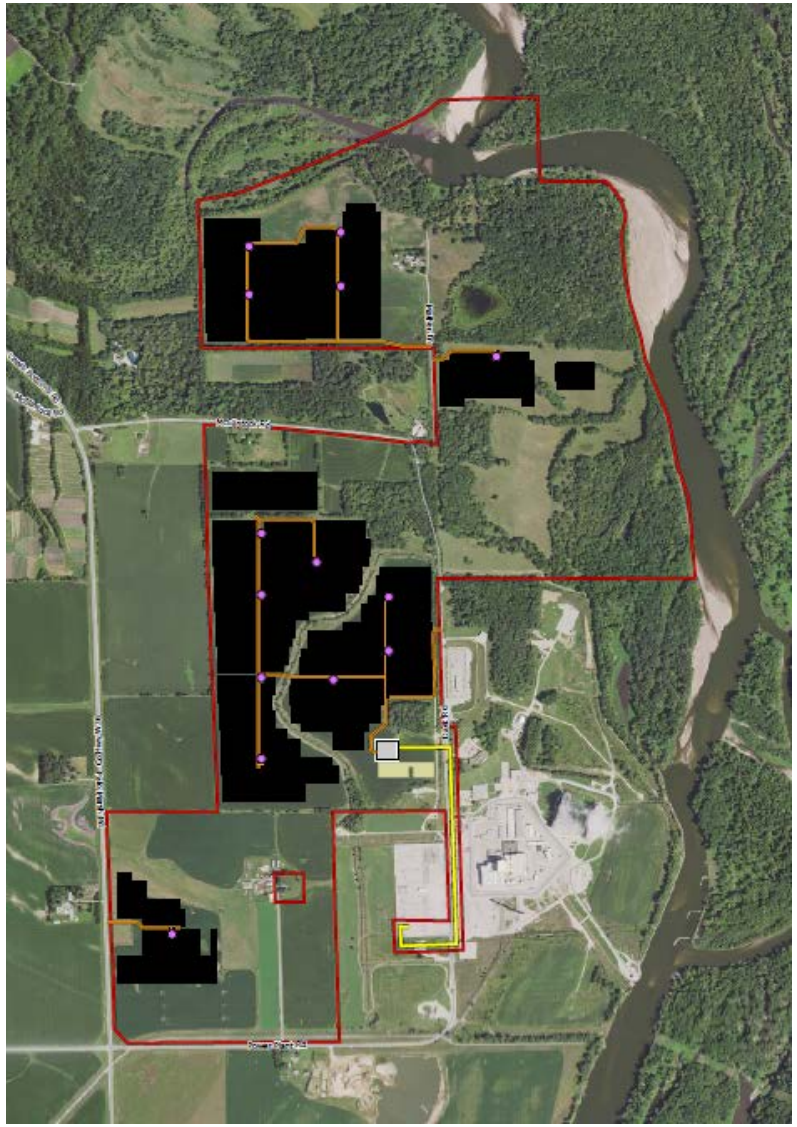
- **Solar Resource Assessment**
  - *Using best practices, the Project Study Area was identified as suitable for solar development*
- **Available capacity at Duane Arnold Substation**
  - *Use pre-existing infrastructure*
- **Interested Participating Landowners and Proximity to Infrastructure**
  - *100% voluntary easements from participating landowners*
  - *The Project will not seek the use of eminent domain*
- **Avoids Cultural and Natural Resources**
- **Project Need**
  - *Agreement with IPL (Alliant Energy)*
    - *Consistent with Iowa law and policy promoting renewable generation*
    - *Cleaner energy for IPL customers*

Duane Arnold Solar Phases I and II: Side by Side Map



Filed with the Iowa Utilities Board on November 23, 2021, GCU-2021-0002

Duane Arnold Solar Project Phase I Overview



Nameplate Capacity	50 MW AC (62.5 MW DC)
Transmission Operator | Interconnection Line	ITC MIDWEST
Point of Interconnection	Duane Arnold Substation
Estimated Commercial Operation Date	December 2023
Estimated Start of Field Construction	Q2 2023
Project Life (if not extended)	30 years
Site footprint (acres)	~316 acres
Purchaser	Interstate Power and Light Company (Alliant Energy)

Duane Arnold Solar Phase I Design Features

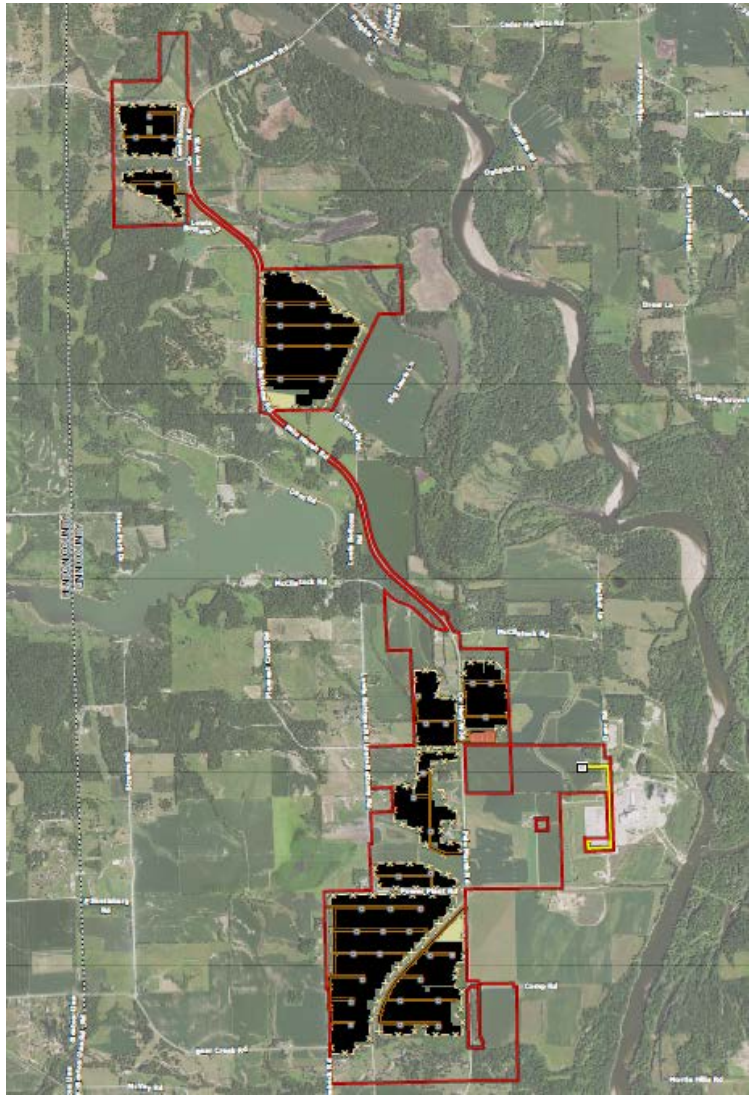
Panel Acres	~96 acres
Fenced Acres	~300 acres
Impervious Surface	~6.4 acres
Solar Array Blocks	2,050 single-axis, horizontal tracker mounting systems supported by over 23,500 steel piles; between 120,000 and 129,000 solar panels
Setbacks	Minimum 15 feet between panels and Project fence line
Setbacks	Minimum 6-10 feet between panels and access roads
Setbacks	50-80’ from non-participating property lines and at least 300’ from non-participating landowner dwellings
Flood Zones	Avoids FEMA 100-year/500-year flood zones

Duane Arnold Solar Phase I Construction Timeline

Q1 2023	Mobilization
Q2 2023	Field Construction
Q3 2023	Commissioning
Dec. 2023	Commercial Operations

Filed with the Iowa Utilities Board on November 23, 2021, GCU-2021-0002

Duane Arnold Solar Project - Phase II Overview



Nameplate Capacity	150 MW AC (187.5 MW DC) and 75 MW battery energy storage system (BESS)
Transmission Operator | Interconnection Line	ITC MIDWEST
Point of Interconnection	Duane Arnold Substation
Estimated Commercial Operation Date	December 2024
Estimated Start of Field Construction	Q1 2023
Useful Life (if not extended)	30 years
Site footprint (acres)	~815 acres
Purchaser	Interstate Power and Light Company (Alliant Energy)

Filed with the Iowa Utilities Board on November 23, 2021, GCU-2021-0002

Duane Arnold Solar Phase II Design Features

Panel Area	~237 acres
Fenced Area	~771 acres
Impervious Surface	~17 acres
Solar Array Blocks	5,200 single-axis, horizontal tracker mounting systems supported by over 60,500 steel piles; between 370,000 and 380,000 solar panels(2)
BESS	2.75 acres; 88 containers (20ft x 8ft), each with 10 racks; total of approximately 7,040 modules. Each container will be anchored to 6 concrete or steel pile foundations
Setbacks	Minimum 15 feet between panels and Project fence line
Setbacks	Minimum 6-10 feet between panels and access roads
Setbacks	50-80’ from non-participating property lines and at least 300’ from non-participating landowner dwellings
Flood Zones	Avoids FEMA 100-year/500-year flood zones

Filed with the Iowa Utilities Board on November 23, 2021, GCU-2021-0002

Duane Arnold Solar Phase II 75 MW Battery Energy Storage System (BESS)

- **88 containers (20ft x 8ft), each with 10 racks, and a total of approximately 7,040 lithium-ion battery modules**
  - The batteries will be housed in specially designed containers
  - Each container will be anchored to 6 foundations
  - BESS footprint approximately 2.75 acres
- **The BESS containers will connect to 22 inverters (4 containers per inverter) that will utilize a separate collection system to charge from and discharge to the Project substation**

Duane Arnold Solar Phase II Construction Timeline

Q1 2023	Mobilization
Q1 2023	Field Construction
Q3 2024	Commissioning
Dec. 2024	Commercial Operations

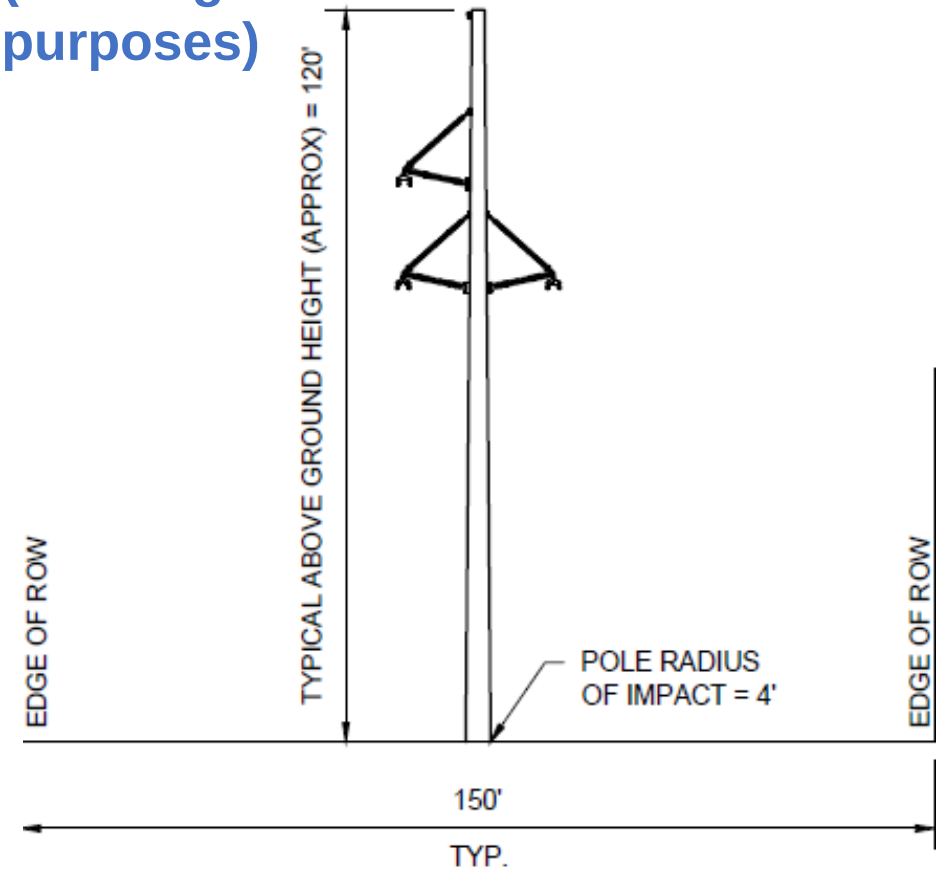
Duane Arnold Solar Phases I and II Shared Facilities

- **Project Collector Substation**
  - Transforms the electricity from the collection voltage to the interconnection voltage
  - Allows the electricity collected to match that of the grid and end-users

- **Main Step-Up Transformer**
- **Control Enclosure**
- **Circuit Breakers**
- **Disconnect Switches**
- **Relay Panels**
- **Surge Arrestors**
- **Grounding System**
- **Metering**
- **Communications Equipment**
- **Down-Shielded Lighting**

Duane Arnold Solar Phase I and II Shared Facilities

An overhead transmission line is used to connect the Project substation to the local utility substation (drawing is for illustrative purposes)



Gen-Tie length	< one mile (0.55 to 0.75 mile) 161 kV
Typical Pole	Single Circuit Steel Monopole ~120 feet above ground height
Project Substation	1.3 acres
Point of Interconnection	Duane Arnold Substation
Useful Life (if not extended)	30 years

Combination of repurposed and shared Project facilities minimize interconnection/transmission impacts and permit Phase I and II to interconnect hundreds of MWs of solar with minimal new transmission facilities - reducing cost and other impacts

Duane Arnold Solar Project Phase I – Economic Benefits

Earnings

Construction and Operations will result in between approximately $21.0 million and $24.7 million in earnings for Linn County and for the State of Iowa

Output

Local output for Linn County and the State of Iowa is projected to collectively increase between $54.2 million and $63.6 million.(1)

Tax Revenue

~$1.78 million in tax revenue(1)

Jobs

Jobs during Construction: 90-100

Jobs during Operations: 1 FTE

1) Estimated over 30 years of the Project

Duane Arnold Solar Project Phase II – Economic Benefits

Earnings

Construction and Operations will result in between approximately $63.9 million and $73.9 million in earnings for Linn County and for the State of Iowa.

Output

Local output for Linn County and the State of Iowa is projected to collectively increase between $171.2 million and $196.8 million.(1)

Tax Revenue

~$5.42 million in tax revenue(1)

Jobs

Jobs during Construction: 90-100
Jobs during Operations: 1 FTE

1) Estimated over 30 years of the Project

Duane Arnold Solar Project Phases I and II – Environmental Benefits

➢ Carbon Emissions Reductions

- Phase I is estimated to reduce CO_2 emissions by approximately 3.14 million metric tons compared to an equivalent coal-fired facility and 1.355 million metric tons in comparison to a natural gas facility.

- Phase II is estimated to reduce CO_2 emissions by approximately 9.49 million metric tons compared to an equivalent coal-fired facility and 4.1 million metric tons in comparison to a natural gas facility.

- By design, storage batteries do not create any waste product during their charging and discharging cycles.

Environmental studies completed within Project areas

- **Each Project has evaluated site-specific conditions**
  - Biological and Bat Habitat Assessments
  - Eagle and Raptor Nest Survey
  - Cultural Surveys
  - Wetland Delineations
  - Noise Analysis
  - Phase I Environment Site Assessment
  - Hydrology Study
  - Geotechnical Investigation

- **Impacts to environmental resources have been avoided or minimized**
  - Tree clearing window to be followed for listed bats, if needed
  - Sites on or potentially eligible for the National Register of Historic Places will be avoided
  - Jurisdictional wetlands and waters will be avoided

- **Project will create additional environmental benefits**
  - Fencing will allow for wildlife corridors through the Project Site
  - Perennial vegetation
  - Minimize Erosion

Vegetative Management Plan

- **Goals and Objectives:**
  - Establish and sustain vegetation that will not require irrigation, regular fertilization, or pest management
  - Comply with all applicable regulatory requirements, including Linn County ordinances for ground cover, erosion and sediment control, stormwater management, and weed control

- **Construction Phase**
  - Cover Crops will be installed to:
    - Maximize soil retention
    - Aid in weed suppression
    - Increase soil organic matter

- **Operations Phase**
  - Solar Panel Array Zone:
    - The solar panel array zone will consist of predominantly native perennial vegetation that would:
      - Establish quickly
      - Minimize erosion
      - Manage runoff
      - Build soil

Low growing perennial vegetation under panels will provide several benefits

- **Solar facilities planted with locally appropriate low growing grasses could result in a 124% increase in pollinator supply, 22% increase in soil carbon storage, 90% increase in sediment capture, and 9% increase in storm water retention capacity** [(1)]
  - The Projects are coordinating with Linn County to design a diverse seed mix that is expected to result in a further increase in benefits
- **Allows land to remain fallow, promotes accumulation of organic material, and improves soil and water quality**
  - Inclusion of legumes will fix nitrogen into soils
- **Minimal maintenance for vegetation in contrast to some tillage and agricultural practices that can weaken soils**
  - Typical maintenance includes mowing
  - Limited herbicide spot-treatments for invasive or woody species as needed
- **Land can return to agricultural use after decommissioning of the Project**

1. Walston, L. J., L. Yudi, H. M. Hartmann, J. Macknick, A. Hanson, C. Nootenboom, E. Lonsdorf, J. Hellmann. 2021. Modeling the ecosystem services of native vegetation management practices at solar energy facilities in the Midwestern United States. Ecosystem Services 47: 101227

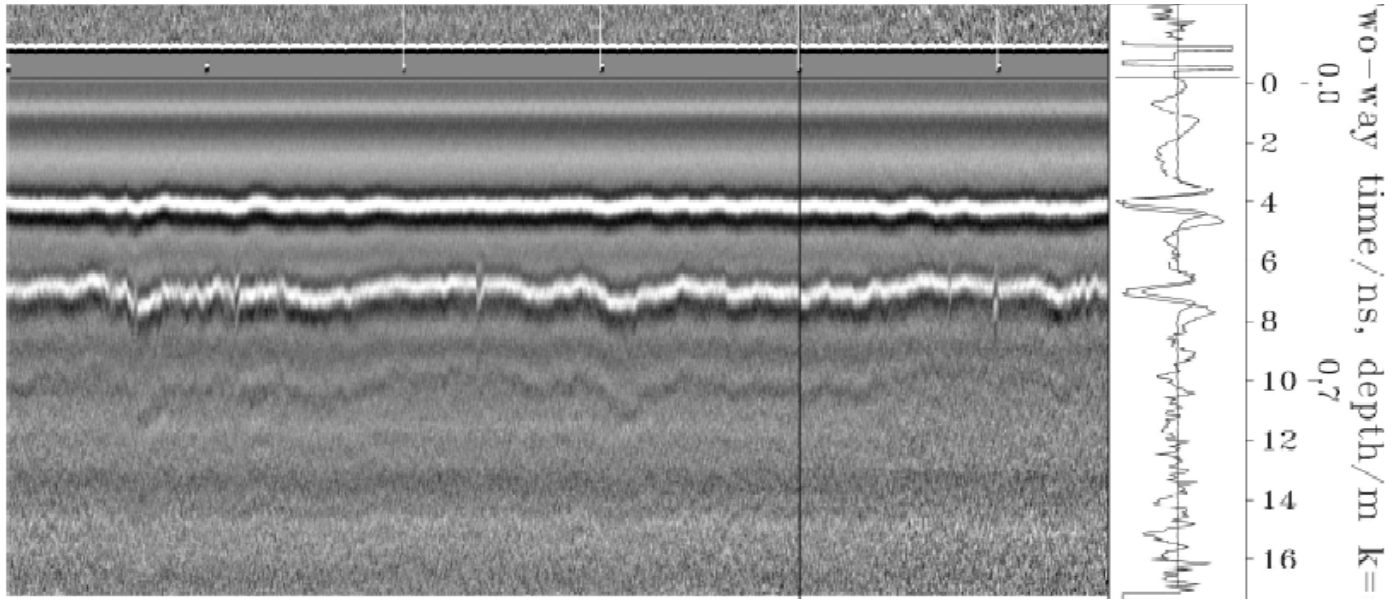
Vegetative Screening

- **Duane Arnold Solar Phase I and II has discussed vegetative screening with participating and adjacent non-participating landowners**
  - These discussions will be on-going through construction and continue thereafter

  - Screening may include the following:
    - Screening planting plans
    - Funding the costs of native shrubs and trees selected and Installation
    - Installation by a qualified local landscape nursery

Road Use

- **Existing road evaluations consist of various field studies and reports**
  - Drainage Structure Inventory – Bridges and Culverts
  - High-Definition Video
    - Documents pre-construction condition
  - Ground Penetrating Radar (GPR)
    - Document thickness and uniformity of pavement and base layers
  - Falling Weight Deflectometer (FWD)
    - Measure road strength/stiffness
  - Pavement Cores and Geoprobes
    - Determine components and condition of subgrade materials



Duane Arnold Solar Phase I and II will conduct pre-construction road condition analysis in accordance with land use permitting in Linn County, Iowa

Conclusion of Construction

➢ Projects located on 100% voluntary easements

- At the conclusion of construction, the Project owner will meet with landowners to discuss and settle any confirmed construction damages.
- Such confirmed construction damages may include crop compensation and repair to drainage tiles damaged as a result of Project construction.
- Landowners are free to negotiate specific terms applicable to their property.

Decommissioning

- **At the end of the Project's useful life, the Project owner will assess whether to cease operations and decommission the Project or to replace equipment and attempt to extend the life of the Project.**
- **In general, decommissioning activities would include:**
  - Dismantling and removal of all above ground equipment (solar panels, racking, transformers, Project Substation, BESS equipment, etc.);
  - Removal of all above ground cabling;
  - Removal of posts;
  - Break-up and removal of concrete pads and foundations;
  - Pumping and break-up of any septic tank (backfilled with clean soil) and abandonment of leach field (if applicable);
  - Removal and/or abandonment of underground utilities; and
  - Scarification of compacted areas within and contiguous to the solar plant facility (including but not limited to internal and external access roadways).
- **For the Gen-Tie line and collector substation, dismantling would include:**
  - Dismantling and demolishing above ground structures;
  - Removal of concrete foundations;
  - Excavation and removal of soils and broken concrete from the site; and
  - Surface contouring to return the disturbed areas to near-original conditions.

Proudly Supporting Communities Where We Work

Phase I and II of the Project are projected to provide approximately $7.0 million in property taxes, additional revenue for all taxing districts

- Up to 200 construction jobs
- Two full-time, quality, high-paying jobs
- Significant landowner payments
- Efficient, reliable, and safe
- Community Relationships
  - Kirkwood Community College
  - HACAP
  - Palo American Legion
  - Cougar Electric Co.
  - Trees Forever
  - Marion Heritage Museum
  - Airport National Golf

Thank You

www.DuaneArnoldSolar.com and Click on “Get Involved”

Visit Facebook.com/DuaneArnoldSolar “Like” our page to stay engaged

606 First Street, Palo, Iowa 52324

Tuesday 12 - 4 pm, Wednesday 8 am - 12 pm, Thursday 3 - 7 pm, Saturday 8 am - 12pm

Questions?

December 20, 2021

Thank you for the opportunity to provide comment on the **Post Shutdown Decomission Activities Report** submitted by NextEra Energy on April 2 , 2020.

There are three areas that appear to be worthy of consideration by the Nuclear Regulatory Commission in light of the proposed Utility Solar development by NextEra Energy which will border Duane Arnold Energy Center (DAEC).

Tritium Under section 2.3.6 *Groundwater Protection and Radiological Decommissioning Records Program* it is noted "In 2012, measureable amounts of tritium began to be detected in some of the groundwater monitoring wells in an area immediately adjacent to the south side of the Turbine and Reactor buildings, continuiing for a short distance to the southeast on the plant property."

The document then goes on to state, "As a result of the ongoing mitigation and given a tritium half-life of 12.3 years, no tritium mitigation is expected to be required at the end of the SAFSTOR period."

The questions we would like nuclear regulators to consider.

1.) Will the driving of beams repeatidly in the soil cause disruption of underground water which could cause the previously controlled tritium plume to disperse?
2.) Will the distruption and/or damage of field drainage tile sytems near DAEC due to construction of Duane Arnold Solar (DAS) disrupt groundwater and change the containment of the tritium?

Fire Management In 2.2.1.4 *Fire Protection Systems* indicates "…the ability to protect spent fuel and other radioactive materials from potential fire induced releases."

The outstanding question we would like the Nuclear Regulatory Commission to verify is the facility ready to handle potential fire risk from a nearby utlity solar and battery installation with volunteer fire department support?

Security requirement discussed in 2.2.2 *Dormancy* is "Security during the dormancy period will be conducted primarily to safeguard spent fuel on site and prevent unauthorized entry." The key words we observed in this paragraph are "unauthorized entry."

There appears there may be two different security challenges due to construction of the Utility Solar facility.

1.) the increased amount of traffic that will be within proximity to the facilty during the period of construction and
2.) the reduced visibilty upon conclusion of the construction due to rows of solar panels that will project approximately 13' into the air at maximum height.

Will these changes need to impact operational plans during the decommisssioning period?

Fund Segregation Finally, in the letter dated February 20, 2020 regarding the **Request for Exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50. 75(h)(1)(iv)** submitted by Dean Curtland of NextEra Energy Duane Arnold Energy LLC indicated

> *"Section (a)(S)(i)(A) of 10 CFR 50.82, "Termination of license,"* states the following: *Decommissioning trust funds may be used by licensees if -- (A) The withdrawals are for expenses for legitimate decommissioning activities consistent with the definition of decommissioning in § 50. 2."*

Would the regulator make sure that if any issues occur at DAEC due to construction or operation from Duane Arnold Solar facilities, that those items are not paid from the DAEC decommissioning trust funds?

Included with this document is the presentation NextEra Energy submitted to the Iowa Utilites Board on November 23, 2021 to provide size, scope and placement of the project.

Again, thank you for the opportunity to provide comment and raise questions.

Sincerely,

Bari Richter
915 Duroe St.
Jesup, IA 50648

Attachment