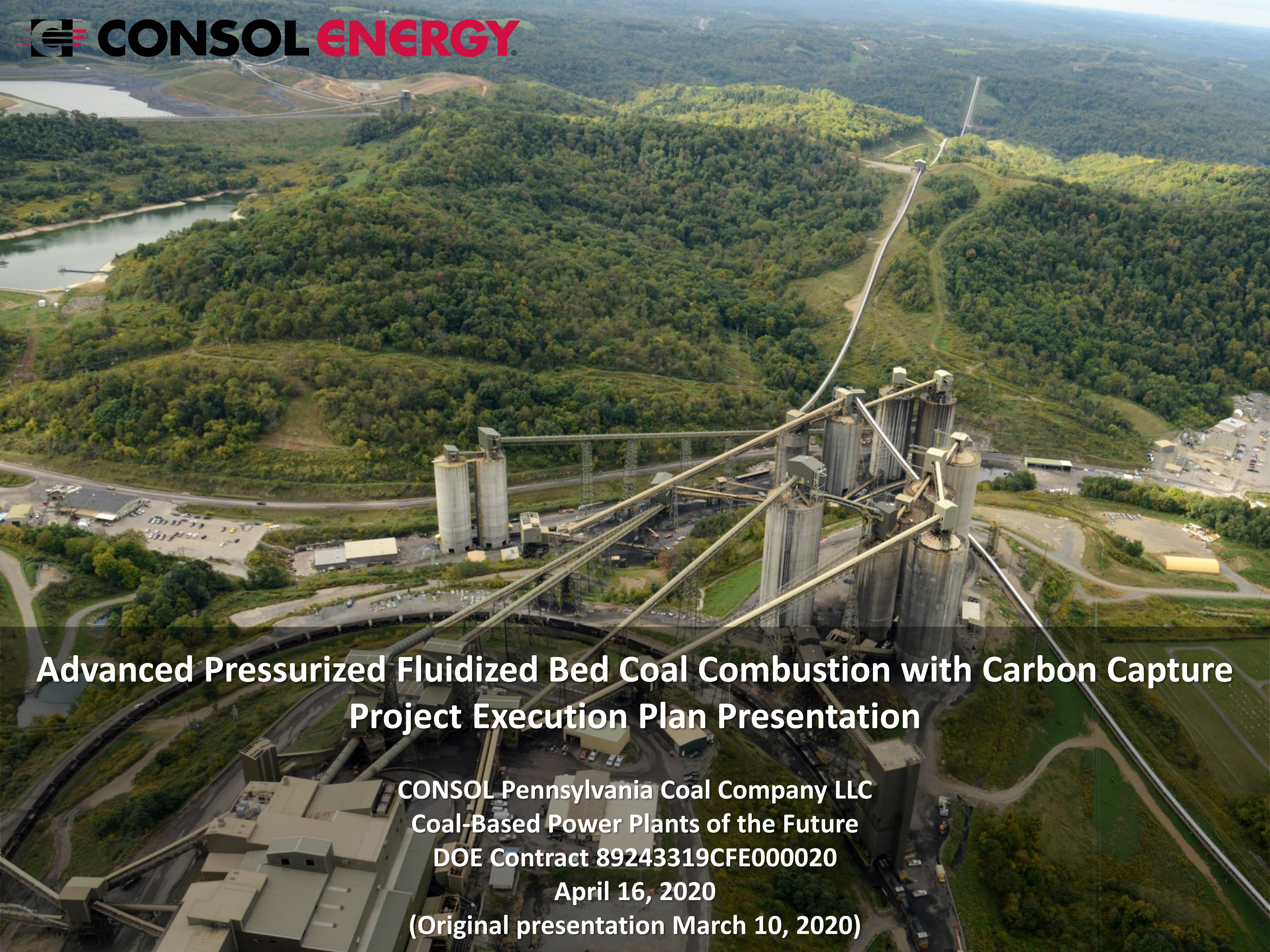

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Advanced Pressurized Fluidized Bed Coal Combustion with Carbon Capture
Project Execution Plan Presentation

CONSOL Pennsylvania Coal Company LLC
Coal-Based Power Plants of the Future
DOE Contract 89243319CFE000020
April 16, 2020
(Original presentation March 10, 2020)

Disclaimer

This presentation contains statements, estimates and projections which are forward-looking statements (as defined in Section 21E of the Securities Exchange Act of 1934, as amended). Statements that are not historical are forward-looking, and include, without limitation, projections and estimates concerning the timing and success of specific projects and the future production, revenues, income and capital spending of CONSOL Energy, Inc. ("CEIX") and CONSOL Coal Resources LP ("CCR," and together with CEIX, "we," "us," or "our"). When we use the words "anticipate," "believe," "could," "continue," "estimate," "expect," "intend," "may," "plan," "predict," "project," "should," "will," or their negatives, or other similar expressions, the statements which include those words are usually forward-looking statements. These forward-looking statements involve risks and uncertainties that could cause actual results and outcomes to differ materially from results and outcomes expressed in or implied by our forward-looking statements. Accordingly, investors should not place undue reliance on forward-looking statements as a prediction of future actual results. We have based these forward-looking statements on our current expectations and assumptions about future events. While our management considers these expectations and assumptions to be reasonable, they are inherently subject to significant business, economic, competitive, regulatory and other risks, contingencies and uncertainties, most of which are difficult to predict and many of which are beyond our control. Factors that could cause future actual results to differ materially from those made or implied by the forward-looking statements include risks, contingencies and uncertainties that are described in detail under the captions "Forward-Looking Statements" and "Risk Factors" in our public filings with the Securities and Exchange Commission. The forward-looking statements in this presentation speak only as of the date of this presentation; we disclaim any obligation to update the statements, and we caution you not to rely on them unduly.

Agenda

Welcome

Pre-Feed Study: Project Schedule and Deliverables

Concept Background/Performance Results/Technology Gaps

Project Timeline that Culminates in a Detailed Design for the Project Concept

- FEED Study Approach
- Non-commercial component development
- Partnering with technology providers
- Site selection
- Permitting
- Project financing
- Other considerations
- Project timeline / schedule
- Projected timing of cash flows

Next Steps

Pre-FEED Study: Project Schedule and Deliverables

Deliverable	Description	Anticipated Due Date (# of Days after Exercise of Option)	Accompanying Meeting Requirement	
Kickoff Presentation	Review of conceptual design and discussion of the approach and plan to complete subsequent Pre-FEED Case Study.	Within 10	Yes	**Completed October 15, 2019**
Design Basis Report	A description of the Conceptual Design study results, a compilation of salient design assumptions, including but not limited to: plant capacity, fuel type and composition, ambient conditions, site characteristics, environmental targets, equipment performance targets, selected flexibility traits and target, and projected plant capacity factor.	60	Yes	**Revised report accepted January 15, 2020**
Performance Results Report	A summary of key process performance parameters, including but not limited to: gross and net plant output, plant auxiliary loads, net plant efficiency, water consumption, environmental performance, and performance relative to the plant flexibility metrics provided in Appendix A.	105	Yes	**Final version of report and responses to DOE comments submitted March 20, 2020**
Technology Gap Analysis	An inventory of plant components that are commercially available and plant components that require additional development. A development pathway should be provided for components requiring additional development.	105	Yes	**Final version of report submitted March 20, 2020**
Cost Results Report	The estimated capital and operating costs of the plant concept shall be provided at a level of detail commensurate with NETL's Baseline reports.	145	Yes	**Due April 17, 2020 (extension granted)**
Project Execution Plan Presentation	A description of a project timeline that culminates in a detailed design for the project concept and includes all necessary steps such as non-commercial component development, site selection, permitting, and detailed design.	160	Yes	**Final version and responses to DOE comments submitted April 16, 2020**
Final Pre-FEED Case Study Report	A compilation of the design basis, performance results, cost results, and technology gap analysis that addresses all comments received on the individual sections.	210	Yes	**Due April 17, 2020 (extension granted)**

Project Team / Organization

Consol Pennsylvania Coal Co LLC
Canonsburg, PA

Dan Connell (Program Manager)
Barb Arnold (consultant)

Worley Group, Inc.
Reading, PA

Harvey Goldstein
David Stauffer
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Monessen, PA

Tom Porterfield
Evan Blumer (consultant)

Market Scenario

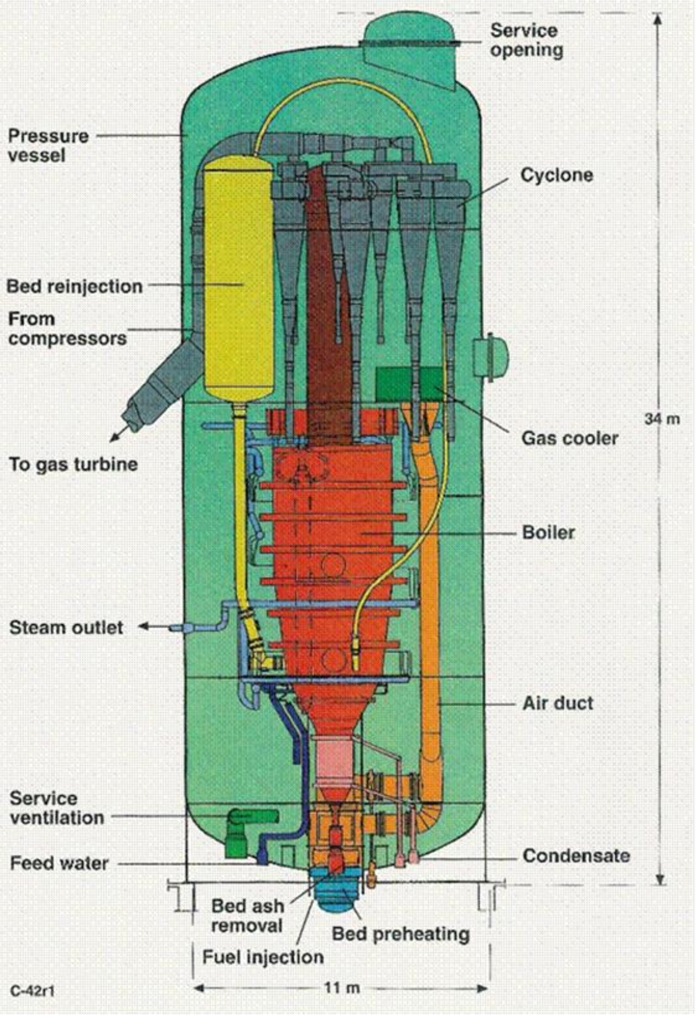
- Future Projections (2027-2050 US average):
  - Delivered coal price (2019 US dollars) = $1.95/mmBtu*
  - Delivered natural gas price (2019 US dollars) = $3.79/mmBtu*
  - Wind and solar penetration = 25% of U.S. generation*
  - Capital cost of a new pulverized coal plant (8,500 Btu/kWh HHV) is >2.5x more than that of a new NGCC plant (6,400 Btu/kWh HHV)
  - Modest fuel+variable O&M cost advantage for coal plant is insufficient to overcome capital cost disparity vs. NGCC plant
- Commercial viability of any new coal-fueled power generation technology depends on:
  - Excellent environmental performance, including very low air, water, and waste emissions
  - Lower capital cost relative to other coal technologies
  - Significantly lower O&M cost relative to natural gas
  - Operating flexibility to cycle in a power grid that includes a meaningful share of intermittent renewables
  - Ability to incorporate carbon capture with moderate cost and energy penalties relative to other technologies
- Overall cost competitiveness of the plant is more important than any single technical performance target
- Timeline to commercialization is critical to transition from existing fleet without compromising coal supply chain sustainability

*Source: U.S. EIA, Annual Energy Outlook 2020 (Reference Case), Release date: January 29, 2020, Available: https://www.eia.gov/outlooks/aeo/

Advanced PFBC with Carbon Capture: Key Technology Features

- Base technology has been commercially proven
  - Stockholm, Sweden (135 MWe, 2 x P200, subcritical, 1991 start-up)
  - Cottbus, Germany (80 MWe, 1 x P200, subcritical, 1999 start-up)
  - Karita, Japan (360 MWe, 1 x P800, supercritical, 2001 start-up)
- High efficiency (42.3% efficiency HHV demonstrated at Karita, Japan, without CO_2 capture)
- Low emissions
  - Sulfur capture is 98% with 0.9% sulfur coal at the Värtan plant in Stockholm without a scrubber
  - NOx emissions at Värtan are 0.05 lb/million Btu using SNCR
- Opportunities for byproduct reuse (ash from the Karita PFBC is used as aggregate for concrete manufacture)
- Designed for small modular construction
- Capable of firing a wide range of fuels, including:
  - Fine, wet waste coal
  - Wet biomass
  - Other opportunity fuels
- Well-suited for CO_2 capture
- Use of wet, fine waste coal demonstrated at pilot scale (1 MWt) at CONSOL R&D without CO_2 capture (2006-2007) and with potassium carbonate-based CO_2 capture (2009-2010)

P200 Combustor Assembly



Design Approach

- Build upon base PFBC platform to create an advanced, state-of-the-art coal fueled power generation system:
  - Integrate smaller P200 modules with a supercritical steam cycle to maximize modular construction while maintaining high efficiency
  - Optimize the steam cycle, turbomachine, and heat integration, and take advantage of advances in materials and digital control technologies to realize improvements in operating flexibility and efficiency
  - Integrate carbon dioxide capture to achieve deep CO_2 removal for geologic storage or beneficial reuse
- Two fuel scenarios considered:
  - Base case: Greenfield Midwestern U.S. plant taking rail delivery of Illinois No. 6 coal
  - Business case: Plant located in proximity to CONSOL's Pennsylvania Mining Complex (PAMC) taking pipeline delivery of fine, wet waste coal from the Bailey Central Preparation Plant
    - ~3 million tons/year of fine, wet waste coal (7,000 Btu/lb dry) produced by PAMC
    - ~34+ million tons/year of fine, wet waste coal produced by currently operating prep plants in 13 states
    - Hundreds of millions of additional tons housed in existing slurry impoundments
    - Low/zero-cost fuel source, minimal transportation costs, eliminates slurry impoundments (environmental liability)

Fuel Specification

Design Coal – Illinois No. 6 (Bituminous)

Rank	Bituminous	
Seam	Illinois No. 6 (Herrin)	
Source	Old Ben Mine	
Proximate Analysis (weight %)		
	As Received	Dry
Moisture	11.12	0.00
Ash	9.70	10.91
Volatile Matter	34.99	39.37
Fixed Carbon	44.19	49.72
Total	100.00	100.00
Sulfur	2.51	2.82
HHV, kJ/kg (Btu/lb)	27,113 (11,666)	30,506 (13,126)
LHV, kJ/kg (Btu/lb)	26,151 (11,252)	29,544 (12,712)
Ultimate Analysis (weight %)		
	As Received	Dry
Moisture	11.12	0.00
Carbon	63.75	71.72
Hydrogen	4.50	5.06
Nitrogen	1.25	1.41
Chlorine	0.29	0.33
Sulfur	2.51	2.82
Ash	9.70	10.91
Oxygen	6.88	7.75
Total	100.00	100.00
	As Received	Dry
Sulfur Analysis (weight %)		
Pyritic		1.14
Sulfate		0.22
Organic		1.46

Business Case Coal – Waste Coal Slurry (Bituminous)

Rank	Bituminous	
Seam	Pittsburgh No. 8	
Source	Fine Waste Coal Slurry	
Proximate Analysis (weight %)		
	As Received	Dry
Moisture	25.00	0.00
Ash	33.34	44.45
Volatile Matter	17.78	23.70
Fixed Carbon	23.90	31.86
Total	100.00	100.00
Sulfur	1.18	1.58
HHV, Btu/lb	5,852	7,803
LHV, Btu/lb		
Ultimate Analysis (weight %)		
	As Received	Dry
Moisture	25.0	0.00
Carbon	33.53	44.71
Hydrogen	2.23	2.97
Nitrogen	0.66	0.88
Chlorine	0.08	0.10
Sulfur	1.18	1.58
Ash	33.34	44.45
Oxygen$_B$	3.98	5.31
Total	100.00	100.00
	As Received	Dry
Sulfur Analysis (weight %)		
Pyritic		0.97
Sulfate		0.03
Organic		0.58

Advanced PFBC with CO_2 Capture Block Flow Diagram – Business Case (Case 2C)

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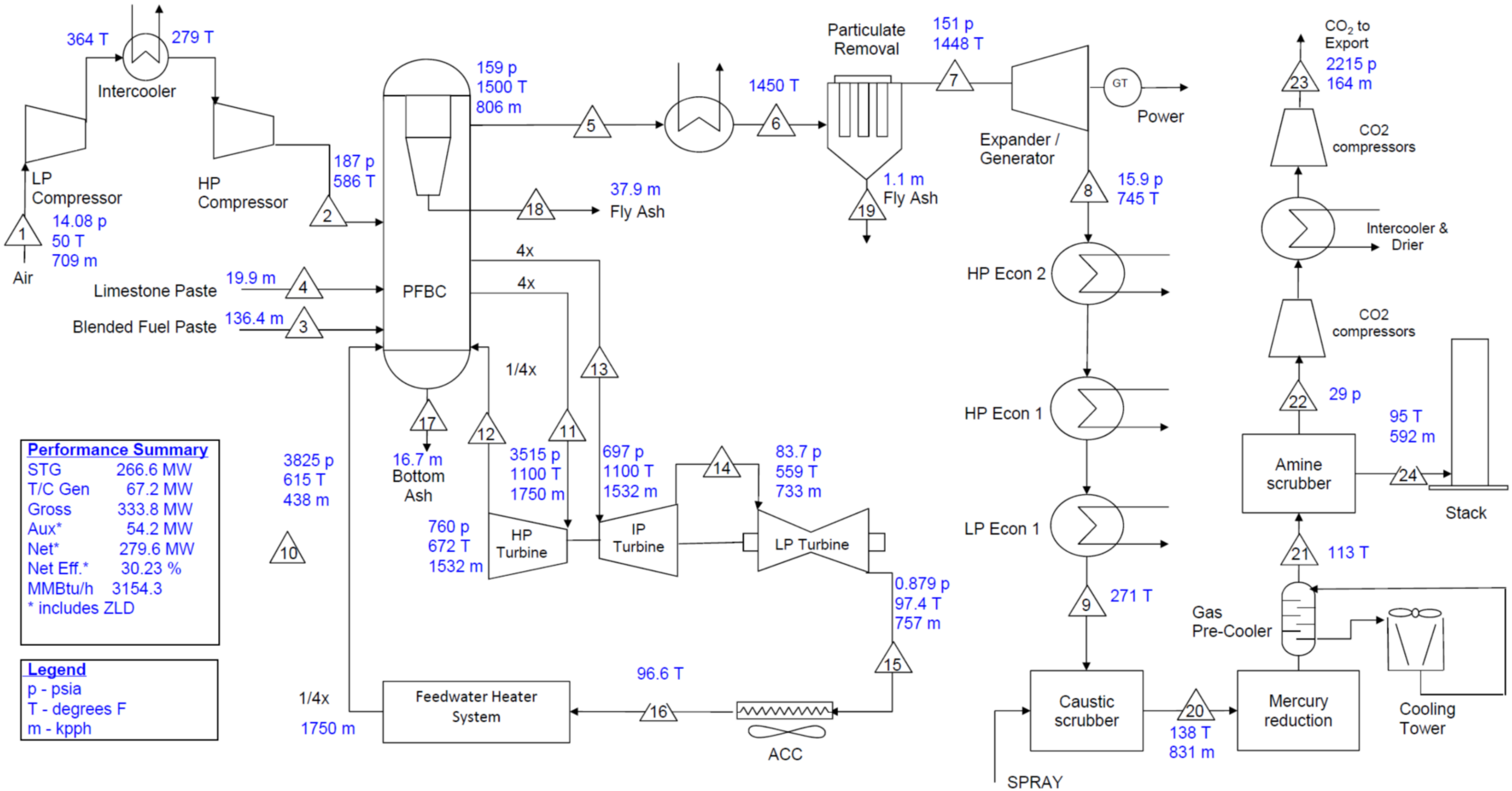
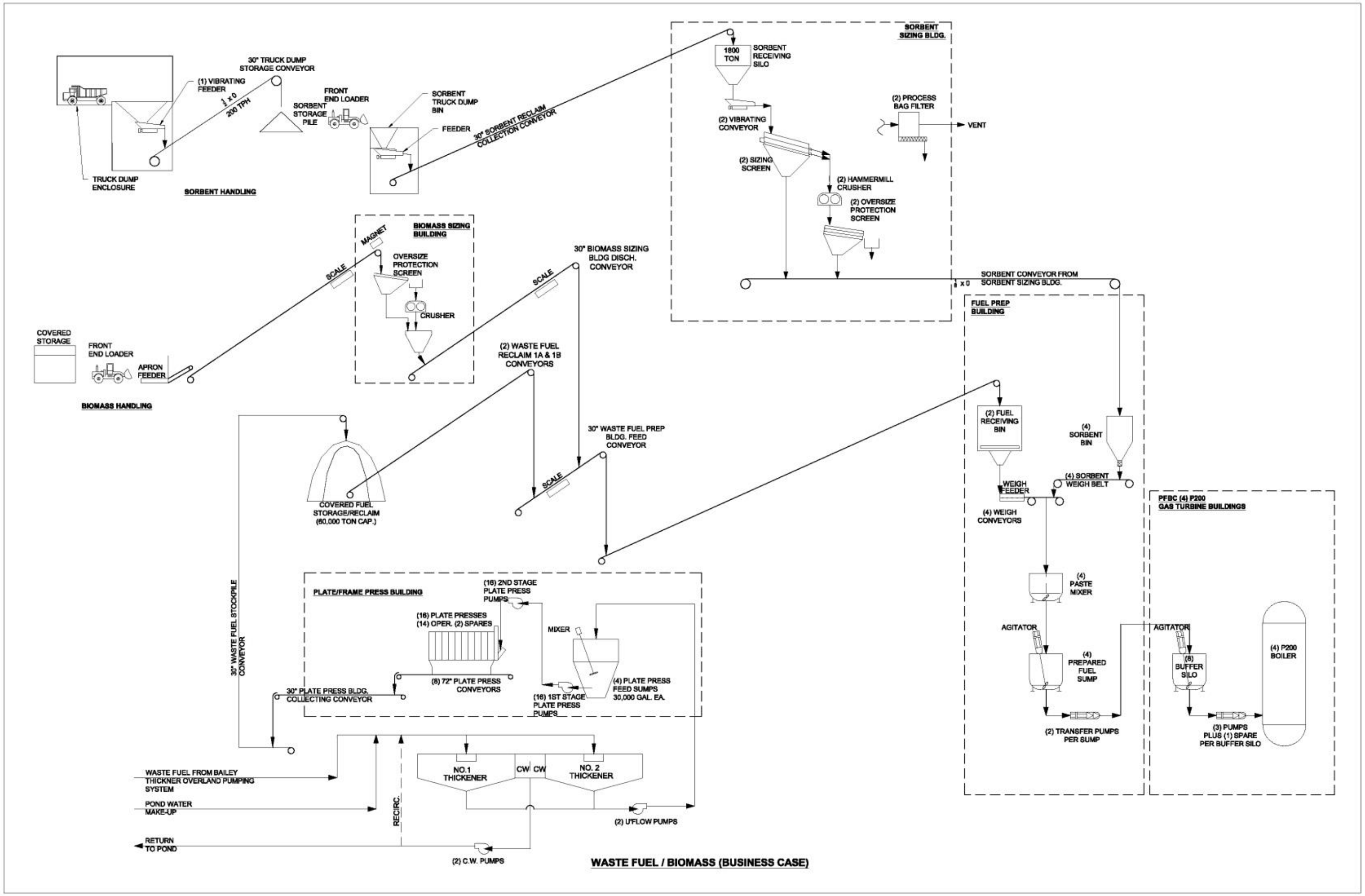


Note: There are four PFBC units and one steam turbine in the plant. Streams for PFBC are for each unit.

Simplified Fuel Prep Flow Diagram – Business Case



Site Plan – Business Case Concept

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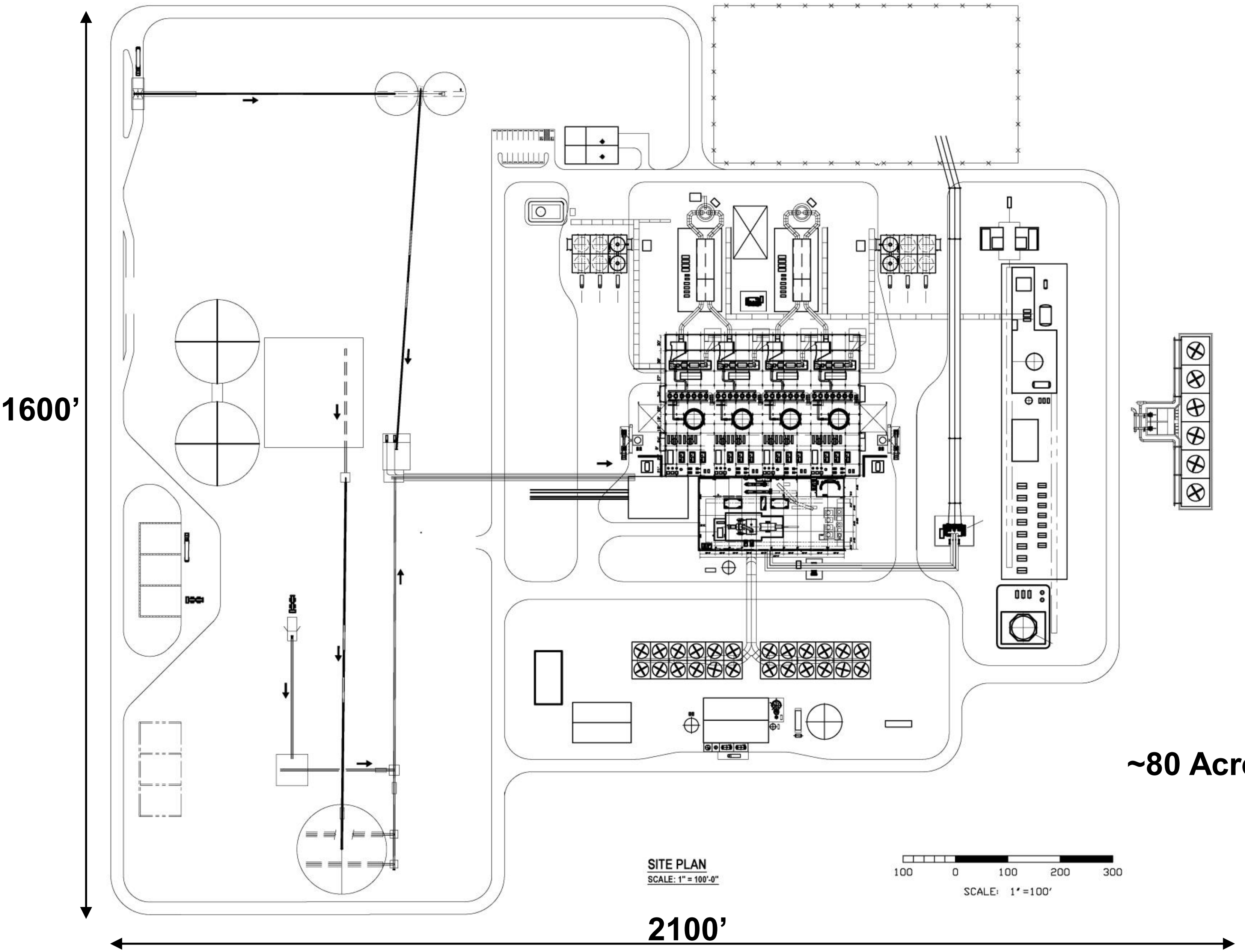

~80 Acres

Performance Results Summary

4xP200 PFBC Plant Performance

Case	Fuel	CO_2 Capture	Gross Gen. (MW)	Net Gen. (MW)	Net Eff (%)	Net Plant HR (Btu/kWh)	Makeup Water (gpm)	Fuel feed (kpph)	Ash Produced (kpph)
1A - Base	Ill No 6	Ready	421.3	404.0	42.49%	8,030	2,495	334.0	85.1
1B - Base	Ill No 6	97%	362.9	307.7	32.37%	10,541	2,936	334.0	85.1
2B - Business	Waste Coal	97%	333.6	279.7	30.27%	11,272	1,383	546.0	232.9
2C - Business	Waste & Biomass	>100% Note 1	333.8	279.6	30.23%	11,287	1,383	546.9	222.8

Net Gen accounts for ZLD aux.

4xP200 PFBC Plant Emissions (lb/MWh,gross)

Case	Fuel	CO_2 Capture	SO_2	NOx	CO	PM	Hg	HCl	CO_2
1A - Base	Ill No 6	Ready	0.07	0.39	0.39	0.02	1.8E-06	0.004	1542
1B - Base	Ill No 6	97%	0.08	0.45	0.45	0.02	2.0E-06	0.005	54
2B - Business	Waste Coal	97%	0.08	0.47	0.47	0.06	2.2E-06	0.002	60
2C - Business	Waste & Biomass	>100% Note 1	0.07	0.47	0.47	0.05	2.1E-06	0.002	60
DOE Target			1.00	0.70	NA	0.09	3.0E-06	0.010	NA

Note 1. Case 2C removes 97% of the CO_2 from the flue gas. Credit for 5% biomass yields over 100% capture.

Technology Gaps

- No plant components identified that require R&D
- Key development items for the next commercial plant
  - Evaluate 12 bar vs. 16 bar operation
  - Screening of CO_2 capture technologies
  - Value engineering exercise
  - Coordination of turbomachine designs
  - Preparation of complete master control system
  - Investigate waste fuel quality options to improve plant efficiency/performance
  - Evaluate the range of CO_2 utilization and storage options
- Several components require custom design and alliance with major industry vendor
  - PFBC boiler designed for supercritical operation
  - Supercritical steam turbine generator
  - Gas turbomachine
  - Hot gas filter (1450 F design T)
  - CO_2 capture system preceded by an SO_2 polisher
  - Master control system to integrate multiple control islands

Project Timeline that Culminates in a Detailed Design for the Project Concept

FEED study approach

Non-commercial component development

Partnering with technology providers

Site selection

Permitting

Project financing

Other considerations

Project timeline / schedule

Projected timing of cash flows

Starting Assumptions for FEED Study

- Configuration is 4XP200 modules at 12 bar with supercritical steam cycle (3500 psig/1100 °F/1100 °F)
- Site is in southwestern PA within the footprint of CONSOL's Bailey Central Preparation Plant site
- Coal specification based on Bailey Prep Plant waste coal slurry / thickener underflow; will be transported to the power plant via pipeline
- Plant designed to co-fire up to 10% (w/w) wet biomass, sourced locally
- Sorbent specification based on Greer limestone
- Hot gas filter available from Mott Corp. or Pall (Danaher)
- Gas turbomachine available from Baker Hughes or Siemens
- Plant designed for ≥97% CO_2 capture; capture system operates at ~1 bar and is located between gas turbine HRUs and the stack
- CO_2 is dried and compressed for geologic storage
- Steam turbine generator heat sink is dry air cooled condenser
- Plant will be equipped with ZLD
- Efforts will be made to integrate the power plant with the existing water balance, electric power supply (behind the meter), and waste disposal facilities at the Pennsylvania Mining Complex / Bailey Prep plant

Activities for FEED Study

- Early trade-off studies
- Prepare updated design basis document
- Update performance models and cost projections based on trade-off study results
- Prepare/submit air permit application based on DOE emissions limits
- Bid cycle for critical vendors
- Heat/mass and water balances
- Amend air permit values as negotiated with PA DEP
- Prepare PFDs, P&IDs, and system descriptions
- Electrical single line diagrams
- GA drawings
- Early civil sitework bid packages (specs/drawings)

Early Trade-Off Studies (7 months at Beginning of FEED)

- 12 bar vs. 16 bar design
- Screening study of post-combustion CO_2 capture technologies and final technology selection
- Evaluation of optimal design target for percentage of CO_2 captured
- Alternative fuel processing options and specifications
- Evaluation of candidate sites and site selection
- Identification/evaluation of alternative makeup water sources
- Alternative heat sinks for STG, etc.
- Evaluation of options for CO_2 geologic storage / beneficial reuse
- Value engineering/cost reduction study

Non-Commercial Component Development

The non-commercial (custom design) components share a common design/procurement/fabrication path:

Preliminary Plant Design: After preliminary heat/mass balances are complete, a procurement specification is prepared and issued for bid

Procurement: A bid evaluation is conducted, and the best offering is selected

Vendor Equipment Design: Vendor proceeds with design and planning for fabrication

Fab & Delivery: Vendor proceeds with fabrication and delivery

Non-Commercial Component Development – Estimated Timelines

PFBC Vessel and Internals (Nooter Eriksen): Lead time from first Notice To Proceed (NTP) to installed pressure test is **38 months**

Gas Turbomachine: Lead time from NTP to delivery on site is **30 months**

Hot Gas Filter: Lead time from NTP to delivery on site is **24 months**

Amine CO_2 capture system: Lead time from NTP to complete installation is **30 months**

Steam Turbine Generator: Lead time from NTP to first steam admission and synchronization is **30 months**

No other component is anticipated to affect the project Critical Path

Note: Timeline estimates based on capabilities stated by each vendor. Preliminary plant design and plant financing must support issuance of NTP's to support overall schedule.

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Partnering with Technology Providers

Equipment	Vendor / OEM	Collaboration	Notes
P200 PFBC Module	• PFBC-EET • Nooter/ Eriksen	✓ ✓	PFBC-EET is providing PFBC knowledge and design information. Nooter/Eriksen has provided a cost estimate for the PFBC pressure vessel and supercritical boiler.
High-temperature particulate filter	• Mott • PALL	✓ ✓	Contact made with both OEMS. Mott has provided performance and cost.
Turbomachine	• GE Baker Hughes • Siemens	✓ ✓	GE Baker-Hughes and Siemens have promised to provide performance and cost based on custom design.
Supercritical STG	• GE • Siemens	✓ ✓	GE and Siemens have provided performance and cost.
SO_2 and HCl polishing scrubber (Caustic)	• Durr Megtec	✓	Durr Megtec has provided performance and costs for a caustic scrubber.

Partnering with Technology Providers (continued)

Equipment	Vendor / OEM	Collaboration	Notes
Amine Carbon Capture	• CANSOLV • Linde	✓ ✓	We used performance and cost information from the DOE baseline study for the CANSOLV system. We have received a valid quote from Linde and are evaluating.
Mercury Capture	• Gore	✓	Gore has provided useful technical information; costs depend on integration with other AQC equipment and ducting.
Fuel Paste Pumps	• Putzmeister	✓	Putzmeister has been supportive of the PFBC design efforts

FEED Phase will require more formal bid cycle and selection of preferred vendor. Then, a negotiated Contract and a Limited Notice to Proceed with a Progress Payment will be issued to enable Vendors to develop engineering information to facilitate BOP design and source long lead items.

Site Selection

- Project Team has identified a list of candidate sites for the Advanced PFBC Power Plant with CO_2 Capture, including:
  - Sites located within the footprint of CONSOL's Pennsylvania Mining Complex in Southwest PA
  - Sites located along the Ohio River in northern WV
- Current Business Case assumes a site located in close proximity to the Bailey Central Prep Plant in Southwest PA
- Site Selection is planned to occur during the initial phase (6 months) of the FEED study
- Key criteria that will affect site selection include:
  - Permitting and site environmental impacts
  - Site preparation/excavation/geotechnical requirements and costs
  - Site access for construction
  - Proximity to fuel sources
  - Proximity to water intake/discharge options
  - Proximity to transmission lines
  - Opportunities for behind-the-meter power offtake
  - Solid waste disposal options
  - Proximity to CO_2 offtake / storage
  - Opportunities for state/local incentives
  - Opportunities for power purchase agreements

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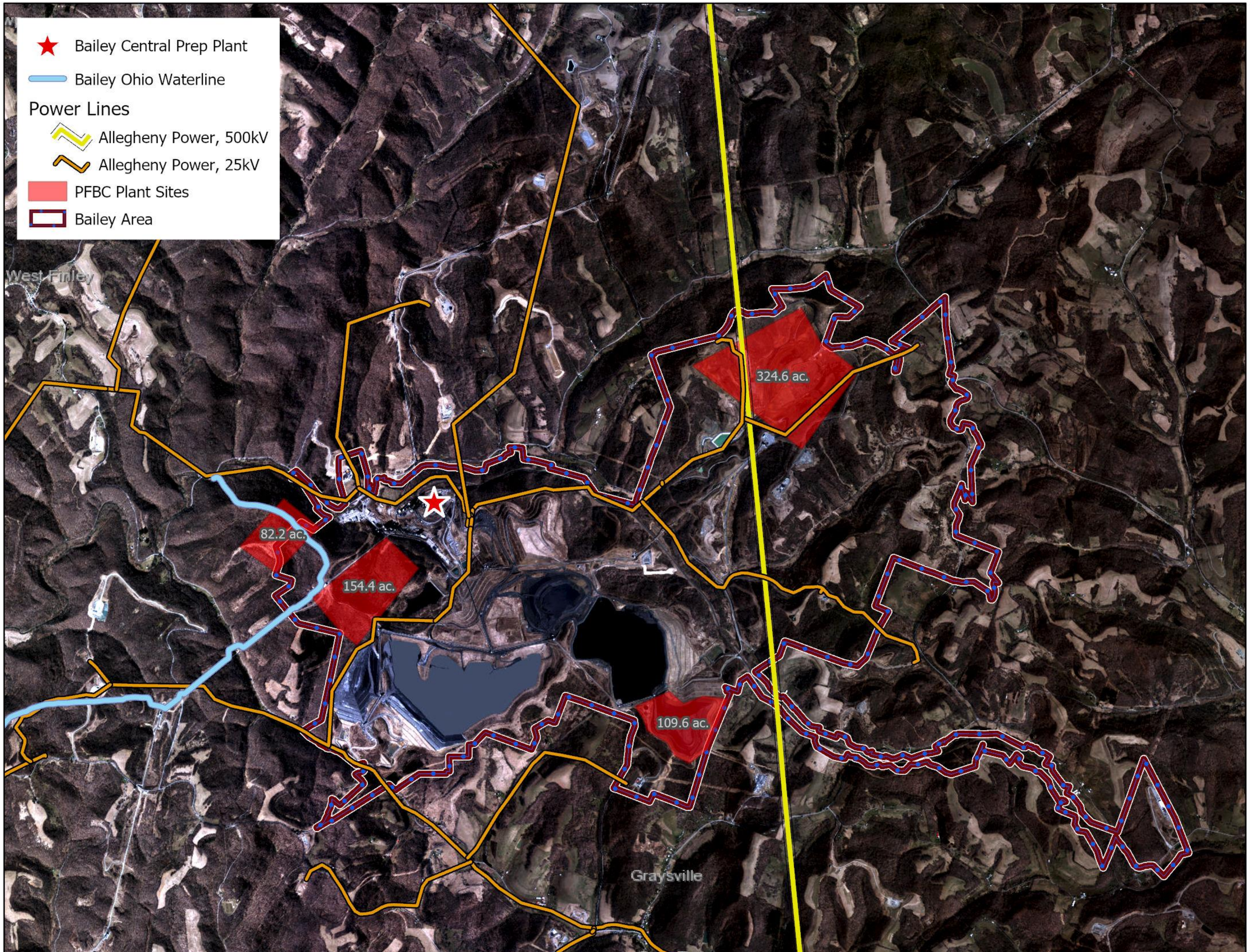
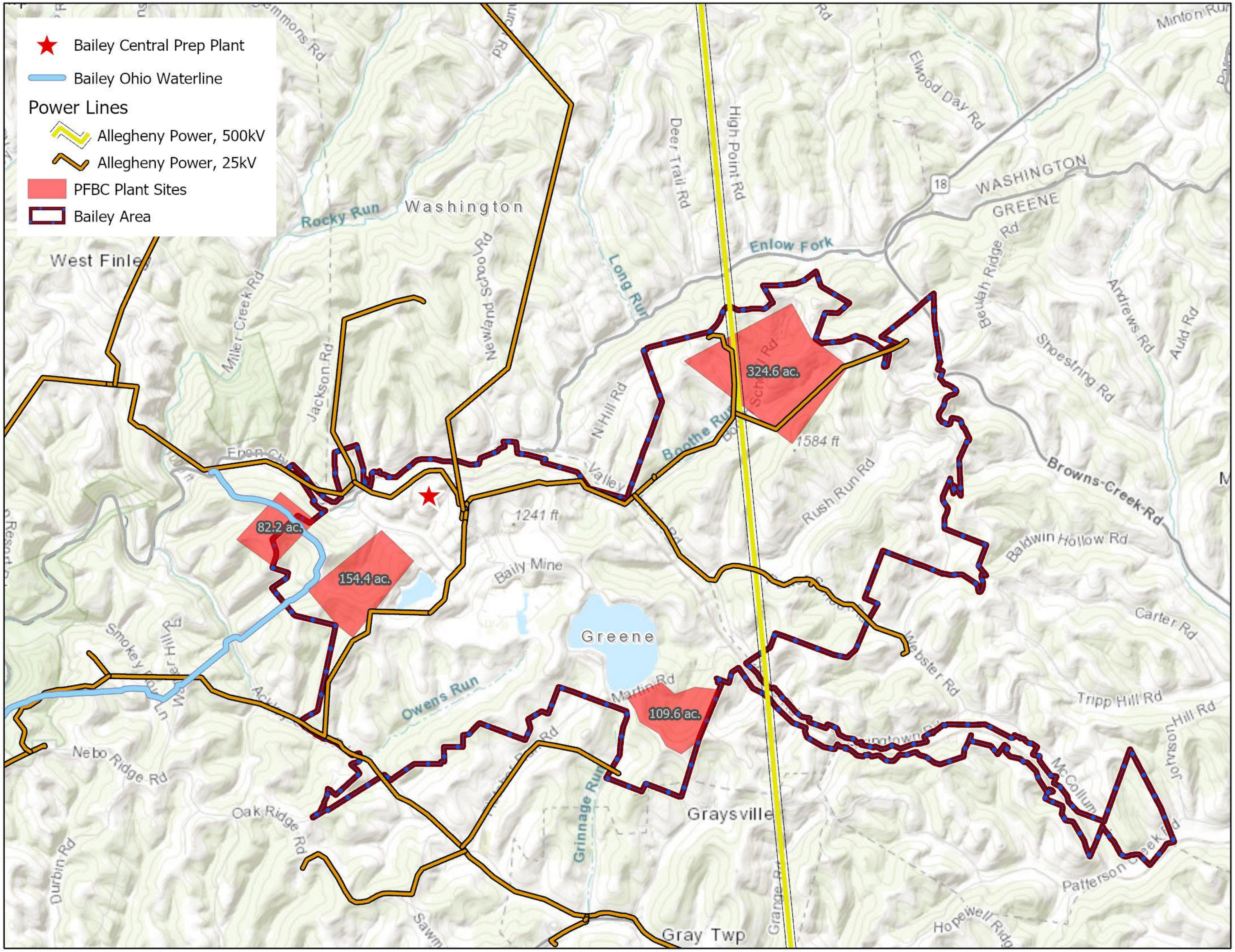
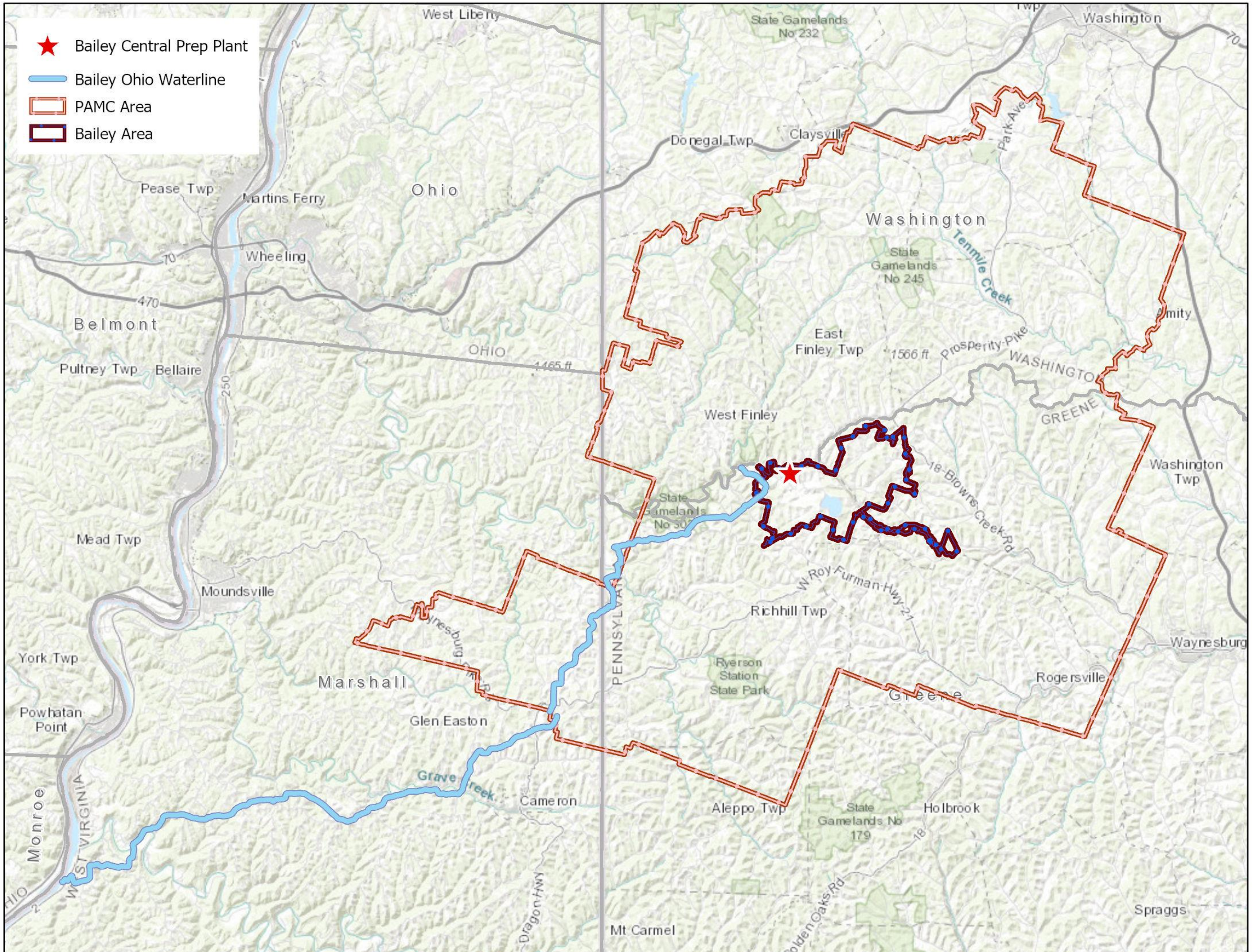
Site Selection – Potential Sites in Vicinity of PA Mining Complex



Site Selection – Potential Sites in Vicinity of PA Mining Complex



Site Selection – Pipeline Right-of-Way to Ohio River



Environmental Permitting Considerations Reflect Project's Minimal Footprint

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1. Local Resources Requirement	• Siting and zoning, coordination with local officials • <u>Streamlined re-classification</u> process given CONSOL surface ownership and proximity to PAMC, if required
2. Connected Actions	• Waste coal fuel generation at adjacent, <u>existing and independent mining operation, limiting "connected actions"</u> • Beneficial use of waste material, minimizes impacts associated with transportation of fuel
Permitting Focus: *3. Construction*	• Evaluation of stream and wetland impacts, USACE permitting/mitigation requirements • <u>Seek to minimize impacts to aquatic</u> resources – aligns with CONSOL's environmental policy and streamlines regulatory approval process
Permitting Focus: *4. Outputs*	• <u>Strive to achieve minimal waste</u>. Emissions profile of PFBC with carbon capture as BACT • Individual NPDES permit – stormwater, benefit of zero liquid discharge (ZLD) system • Dry solid waste (bottom and fly ash) suitable for re-use, reclamation, or sale
5. Alternatives Analysis	• <u>Multiple project specific alternatives analyses completed during Pre-feed study</u> – for instance, evaporative cooling tower verses dry air cooled condenser • Selection of alternatives based on environmental, efficiency, and capital considerations

Environmental Permitting: Pre-Construction Considerations

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<u>Permitting Activities to Commence As Soon As Possible After Project Award:</u>

Anticipated Duration: Approximately 6 months

- **Prepare Environmental Impact Statement (EIS)**
  - Anticipate EIS scrutiny under the National Environmental Policy Act (NEPA), based on federal financial support of the project
- **Collect Baseline Environmental Data Dependent on Site Selection**
  - Collect background surface and groundwater quality data, delineate and assess aquatic resources within project area
  - If needed, commence USACE, PA Chapter 105 permitting and develop mitigation plans
- **Engage Regulatory Authorities to Commence Construction Permitting**
  - Develop corporate cooperation agreements, to convey surface property or use rights to PFBC entity as required for permitting
  - Seek construction erosion & sedimentation (“ESCGP”) control permits from Greene County Conservation District and PADEP to create “pad ready” site

Environmental Permitting: Outputs
Water and Waste Considerations

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Completed in Parallel with Pre-Construction Permitting Activities:

Anticipated Duration: Approximately12 months

- **Obtain Water Withdrawal/Water User Authorizations**
  - Register for “Large Quantity Water User” Authorization in WV (required for >750,000 gallons per month)
  - Obtain WV State “Section 401” certification, authorizing placement of water withdrawal infrastructure
  - Obtain ESCGP waterline construction permits in WV and PA
    - Placement in existing right-of-way minimizes disturbance, mitigates risk, and expedites approval times
- **Secure Individual NPDES Permit for Electric Power Facility (Required Despite ZLD)**
  - Zero Liquid Discharge (ZLD) and Dry Ash systems preclude compliance risk, expense associated with effluent limit guidelines (ELGs)
  - Standard water quality based effluent limits (WQBELs) anticipated, due to stormwater nature of discharges
  - Existing watershed classified as warm water fishery - not “high quality” or “exceptional value”
- **Seek Solid Waste Management Authorizations for Re-use or Sale of Dry Solid Waste**
  - Prepare for pursuit of PADEP “Coal Ash Certification” under 25 Pa Code § 290.201
  - Pursue PADEP “5600-PM-BMP0011” approval for re-use in reclamation at adjacent PAMC or nearby legacy facilities

Environmental Permitting: Outputs
Air Quality Considerations

Commence Immediately in Parallel with Pre-Construction, Water, and Waste Activities:

Anticipated Duration: Approximately 24 months

- **Develop and Submit Title V Permit Application**
  - Nature of PFBC with carbon capture supports efficient review, publication, and approval
- **Complete Analysis of Primary Regulatory Considerations**
  - New Source Review (NSR), Prevention of Significant Deterioration (PSD), New Source Performance (NSPS)
    - Relatively low potential to emit (PTE) with CO_{2e} emissions within 15% of NSPS "*de-minimis*" levels, as a result of CO_2 capture
    - State emission reduction credit (ECR) requirements excluded, due to Greene County, PA "attainment" status and use of waste coal as fuel
  - Emissions Standards for Hazardous Air Pollutants (NESHAP) – Mercury and Air Toxics Standards (MATS)
    - Mercury control efficiency exceeds 98.8% and mitigates any uncertainty associated with MATS rule
  - Cross State Air Pollution Rule (CSAPR)
    - Capacity of <1,000 MW, net total limits exposure under uncertain CSAPR, related NO_x/Ozone trading
- **Commence Construction As Required, Within 18 Months of Title V Approval**

Project Financing

Financing for the proposed project will require a complex capital stack, comprised of investors, lenders, State and Federal incentives and government-backed loan instruments.

A critical consideration will be the scale and terms of DOE project funding, which will then dictate the remainder of capital requirements:

- Grant(s)?
- Loan(s), including "Forgivability" (all or portion)?

The remaining capital and debt will likely be supported by a pool of investors from various sectors, potentially including:

- Capital Investors
- Electric Utility Partners (potentially tied to off-take of Low/No Carbon electricity)
- CONSOL Energy

Additionally, we intend to fully explore and utilize:

- U.S. Dept. of Agriculture
  - Rural Utility Service – grants, low-interest loans and loan guarantees for projects serving or benefitting "rural communities"
  - USDA Rural Development – support for biomass production operations, in the form of grants, low-interest loans and loan guarantees
- DOE Loan Program - Title 17 "Innovative Energy Loan Guarantee Program" (Advanced Fossil Energy, Advanced Nuclear Energy, Renewable Energy & Efficient Energy)
- Federal Stimulus Programs related to COVID-19, and broader economic support and infrastructure development programs

During the FEED Study we will fully explore the options outlined above, consider the various opportunities and trade-offs, and determine the final structure for project financing

Project Financing (continued)

The unique attributes of the PFBC-CCS (& BECCS) system and the fuels (waste coal and biomass) significantly and positively impact the financing of this project. "Economic enhancements" are any grants, tax credits, production credits or market-valued alternative energy credits that may positively impact the development of this project:

Direct Enhancements – direct payments or tax-credits (transferable)

Indirect Enhancements – reductions in current expenses or regulatory "costs" associated with the Bailey Prep Plant and CONSOL's Pennsylvania Mining Complex

Direct Revenues – from both electricity (wholesale and retail) and CO_2 (if used for EOR or other "utilization")

Overall Financing Support – programs within the Federal Government that provide opportunity for broad support of innovative energy projects: low-interest loans or direct grants to qualified facilities and projects

Potential Economic Enhancements

Direct Enhancements

Waste Fuel Disposal – Tax Exempt Financing	Can cover all aspects of project that "touches" solid (Private Activity Bonds) waste material
Waste Fuel Disposal – Accelerated Depreciation	All aspects of the project considered tied to solid waste (MACRS) disposal qualify for 7-Year, accelerated depreciation. Unclear if this represents the entire capital cost of the project, or is limited to aspects related to solid waste disposal
Closed Loop Biomass – Production Tax Credit	All energy produced by closed-loop (purpose grown) biomass (based on percentage of fuel used on a BTU basis) qualifies for a \$0.025/kWh tax credit (*IRS Section 45B provides Production Tax Credits for up to 10 years after beginning service).*
45Q - CO_2 Utilization/Sequestration Tax Credit	All CO_2 that is verified as "sequestered" in geologic formations qualifies for \$50.00/ton (CO_2) in 45Q Tax Credits All CO_2 that is verified as "used and sequestered" for Enhanced Oil Recovery qualifies for \$35.00/ton (CO_2) in 45Q Tax Credits *Eligible projects that begin construction prior to January 1, 2024 can claim 45Q Tax Credits for up to 12 years after beginning service.*
Pennsylvania Alternative Energy Credit Program (AEPS)	Tier 1 (Biomass) at 8% of total and Tier 2 (Waste Coal) "alternative" energy sources are required of all energy suppliers in PA (EDCs & ECSs). Qualified generation is issued "credits" at a rate of 1 credit per MWh of generation.

Key: _BLACK = Federal Programs BLUE = PA State Programs GREEN = Overall Project Support Programs

Potential Economic Enhancements (continued)

Direct Enhancements (cont.)

Pennsylvania Alternative Energy Credit Program (cont.)

Alternative Energy credits can be used directly, traded or sold. Pricing of credits varies with market and supply. In 2019, Tier 1 Credits were valued at an average of $6.41/credit.
In PA, Tier 1 credits for Biomass cover both closed-loop and open-loop production systems as defined above.

NOTE: Pennsylvania's AEPS Program is due for re-authorization in 2021. There is currently strong support in the State Legislature for reauthorization, and there are indications that renewed programs will continue strong support for Tier 1 sources (Biomass) and will add CO_2 Capture (particularly with waste fuels and biomass) in Tier 2.

Coal Refuse Energy and Reclamation Tax Credit

Provides State Tax Credits to eligible facilities which:
- generate electricity by using coal refuse for fuel
- control acid gases for emission control
- use ash produced by the facilities to reclaim mining sites

Tax credits are valued at $4.00/Ton of qualified waste coal utilized for power generation. Unclear if this will refer to full tonnage of waste fuel utilized, or only the coal-components of the waste fuel mix

NOTE: Pennsylvania's CRER Program currently has several parameters that could prove challenging for the PFBC-CCS project. Initial guidelines state that Qualified facilities must have been in service prior to July 1, 2016. Initial discussion with Legislators suggests that the Program could be amended (at a later date) to include new facilities, especially as other Coal Refuse Generation facilities come off-line. Additionally, the CRER program is limited to a maximum total of $20M/year, and no single facility can receive more than 22% of the Program's annual total.

Key: BLACK = Federal Programs BLUE = PA State Programs GREEN = Overall Project Support Programs

Potential Economic Enhancements (continued)

Indirect Enhancements

Elimination or reduction of costs associated with disposal	Operational costs as well as regulatory risk related to slurry (long-term storage) of mine waste impoundments are significantly reduced or eliminated as thickener underflow is diverted to PFBC Power Plant
Electricity Cost Reduction (entire mining complex)	The Bailey Prep Plant and the entire CONSOL PA Mining Complex can take advantage of "behind the meter" power, resulting in wholesale power pricing, elimination of (most) transmission & distribution charges, and elimination/reduction of related riders and fees.

Direct Revenues

Electricity Sales	Wholesale Electricity Sales – CONSOL Energy can purchase electricity (wholesale, behind-the-meter) directly from the Power Plant, avoiding T&D charges, and many other "grid-related" charges and regulatory riders. CONSOL's PA Mining Complex has an overall energy demand estimated to account for up to ~50% (~147 MW) of the plant's output

Key: BLACK = Federal Programs BLUE = PA State Programs GREEN = Overall Project Support

Potential Economic Enhancements (continued)

Direct Revenues (cont.)

Electricity Sales (cont.)

The balance of the electricity produced by the Power Plant (+/- 150MW) will be fed into the PJM Regional Grid system. We are optimistic that a Power Purchase Agreement will be initiated to purchase and off-take the "decarbonized" electricity that will be produced

CO_2 Sales

Markets currently exist for CO_2 for utilization in Enhanced Oil Recovery. Current estimates of purchase price (delivered to site) are $10-20/ton CO_2. (Costs and logistics for transport to utilization sites may be prohibitive for this market).

General Project Support

USDA – Rural Utility Service

The RUS administers programs that support infrastructure and related improvements for rural communities, particularly electric power. The RUS provides grants, loans and loan guarantees to finance the construction or improvement of electric distribution, transmission and generation facilities in rural areas.

The Project Team has had ongoing discussion with RUS about PFBC-CCS and believes that there is strong interest in providing support (assuming internal criteria about "rurality" are met).

Key: BLACK = Federal Programs BLUE = PA State Programs GREEN = Overall Project Support Programs

Timing of Project Development Relative to 45Q

As part of the Bipartisan Budget Act of 2018, Congress passed legislation originally introduced as the FUTURE Act (Furthering carbon capture, Utilization, Technology, Under-ground storage, and Reduced Emissions) with broad bipartisan support to expand and reform 45Q.

- Eligible projects must begin construction within 6 years of the enactment of the FUTURE Act (i.e. **before January 1, 2024**).
  - In February 2020 the US Dept of Treasury and IRS issued guidance on "beginning construction" for eligible 45Q projects.
    - **Physical Work Test** – construction "begins" by starting physical work of a significant nature (including: manufacture of major project equipment and components, excavation/site-work, foundations, installation of dedicated power generation of CO_2 capture equipment)
    - **Five Percent Safe Harbor Test** – construction "begins" when project owners based on have paid or incurred five percent or more of the total cost of the project (must also demonstrate continuous efforts towards completion of project)
  - We are confident that CONSOL's Advanced PFBC project can meet these requirements by January 1, 2024.
- Eligible Electric Generating projects must capture and sequester/utilize at least 500,000 metric tons of CO_2 per year.
  - CONSOL's Advanced PFBC project will meet the established guidelines for the volume of CO_2 capture at Electric Generating Units
- Eligible projects can claim 45Q credits for up to 12 years after being placed into service.

Additionally, several legislative proposals for extension of 45Q are currently under consideration, improving investment certainty:

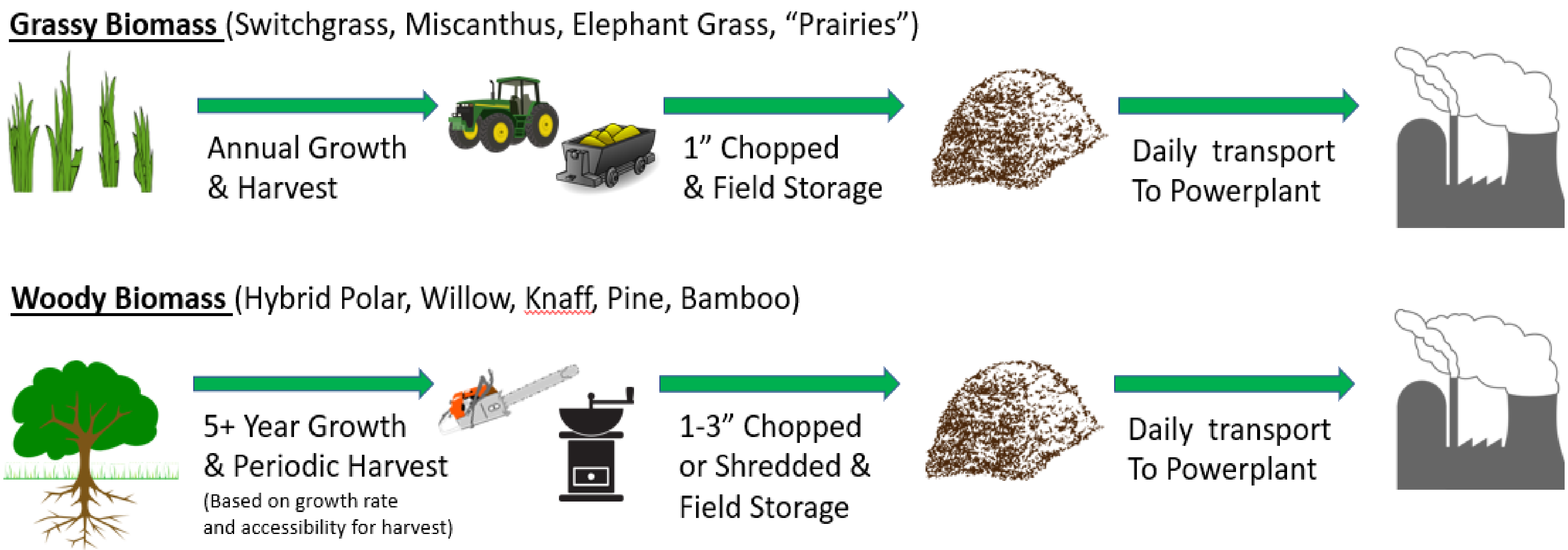
- Sewell proposal (US House of Reps.) – adds 1 year to the "commence construction" window
- Schweikert-Wenstrup proposal (US House of Reps.) – removes "commence construction" window, making 45Q "ongoing"
- Capito-Whitehouse proposal (US Senate) – provides for a 5-year extension to the "commence construction" window

Other Considerations: Biomass Production

A major goal of the Advanced PFBC with Carbon Capture project is integration of biomass co-feed with waste coal fuel:

- ~5-10% biomass co-firing at full-scale plus CO_2 captured at rate of 97% would result in a (net) carbon-neutral or carbon-negative operation.
- Most biomass energy fuels have similar dry-weight energy content to the waste fuel (7,000-8,000 Btu/lb), simplifying fuel handling, mixing and sorbent additions.
- Biomass production (outside of the current scope) assumes an external operation delivering partially processed biomass as 1" chopped material (both woody and grassy biomass). Subsequent processing to 1/4"- 1/2" is integrated into the main fuel + sorbent handling system.
- 20,000 – 25,000 acres of biomass production is required to supply the 10% goal.
- Working with large-scale biomass producers (Fred Circle Enterprises), academic advisors (Dr. Jeff Skousen, West Virginia University and Dr Ratan Lal, Ohio State University), and biomass-processing equipment manufacturers (Vermeer).
- Would utilize a mosaic of biomass crops, based on micro-habitats and maximizing production, including:
  - Switchgrass, Miscanthus, Elephant Grass
  - Hybrid Poplar, Willow, Knaff, Pine
  - Agricultural and Timber waste – including Hemp biomass (all sourced externally)
  - Complex Prairie communities (25+ species) – improving local ecosystems, biodiversity and soil CO_2 sequestration

Biomass Production Operation



Adequate planning of these biomass fuel-supply components requires that we begin planning for these operations in the pre-FEED and FEED stages and will necessitate plantings to begin 3+ years prior to initiation of harvest.

BECCS – A "Negative Emissions" Approach

Bioenergy with carbon capture and storage (BECCS) uses biomass for energy production followed by capture and storage of the resulting carbon. The carbon in the biomass is extracted from the atmosphere when the biomass grows. Capturing/storing this plant-sourced CO_2 post combustion results in a "carbon negative" energy source that removes more carbon from the atmosphere than is emitted.

- IPCC 2°C scenarios generally assume that BECCS will be technically and economically viable and successfully scaled up as a "negative emissions" technology.
- BECCS deployment has been slow and there are few facilities operating. Major BECCS technologies are mature and their potential to impact global CO_2 levels is substantial.
- Advanced PFBC with Carbon Capture project plans to co-feed biomass with waste-coal (~5-10% biomass co-firing at full-scale operation).
- Biomass fuels can be efficiently combusted with subsequent CO_2 capture per prior work at CONSOL's PFBC Test Facility.
- Would establish one of the largest BECCS operations to date (~ 28 MW BECCS at 10% biomass co-feed), resulting in approximately 250,000 tons of CO_2 per year for EOR or sequestration.

Other Considerations: CO_2 Disposition Plan

Effective disposition of the captured CO_2 is a requirement for both the operation and the financing of the project.

Outside the current project scope, we are working with experts and companies specializing in CCS or CCUS, including:

- Oxy Low Carbon Ventures (Occidental Petroleum)
- Denbury Resources
- Battelle (Neeraj Gupta and his team and the Regional Carbon Sequestration Partnership)
- SimCCS team
- Pennsylvania Geologic Survey (State Geologist)
- Great Plains Institute (MW Carbon Capture Partnership)
- National Petroleum Council (CO_2 transport issues only)

Key takeaways:

- The CO_2 Industry (production, utilization and sequestration) is evolving rapidly. Establishment of planned CO_2 pipelines and regional "hubs" is likely in the 5-10 year time-line and could significantly impact markets for CO_2 (EOR and other "utilization").

- No pipelines, injection wells or "hubs" currently exist in the vicinity of the project.

- Pennsylvania geology (particularly the SW region of the State) has not been adequately characterized to determine the viability of geologic storage of CO_2. However, preliminary evaluation of geologic strata suggest that geologic sequestration of CO_2 in SW Pennsylvania is likely to be feasible.

- Several parties are interested in exploring options for establishment of a "regional sequestration hub" in the SW region of the State.

CO_2 Disposition Options Being Evaluated

A) CO_2 transported via barge (either light-weight cylinders or custom gas-transport barges) on the Ohio and Mississippi rivers to the Gulf of Mexico (region) for use in Enhanced Oil Recovery (EOR)

- CO_2 would be transported via low pressure pipeline to the Ohio River, where it would be compressed for transport
- Compressor facilities currently identified in the main project plan would be shifted to this off-site location
- 45Q tax incentives ($35/ton CO_2 for EOR) will help offset some of the capture and transport costs

CHALLENGES

- High capital costs for low-pressure pipeline to Ohio River
- High capital and operating costs for barge operation
- Low purchase price for CO_2 (~$10/ton)
- Evolving market could lead to significant stranded capital if demand for CO_2 for EOR declines

B) Working with partners (State of PA, DOE, Oxy LCV, etc.), establish an injection well (or Regional Injection Hub) in proximity to the power plant.

- Utilizes a local pipeline or “virtual pipeline” to transport CO_2 from the plant to an injection well for geologic sequestration
- 45Q tax incentives ($50/ton CO_2 for geologic sequestration) offset some of the capture, transport and injection costs

CHALLENGES

- Identification of appropriate sites for injection/sequestration
- Moderate capital costs of test wells and related feasibility assessment
- (Potentially high) capital costs of injection well and pipeline from power plant to injection well
- Challenges of establishing easements for both pipeline development, and for sub-surface rights related to drilling and storage
- Uncertainties regarding permitting and public acceptance

CO_2 Disposition – Focus on Geologic Sequestration

The performance of this project, both operationally and financially, will be constrained by our ability to provide consistent utilization or storage of 2.0 - 2.5 MM tons of CO_2 per year.

<u>Key Factors to consider:</u>

Existing CO_2 transportation infrastructure is limited, particularly in proximity to the project site

Efforts to expand relevant infrastructure are underway, but will be evolving over the next 1-2 decades

EOR opportunities are not likely in proximity to the project site, and will be further limited by low oil prices

CO_2 disposition strategy must provide the best economic support to the project through existing tax credit programs +/- revenues from CO_2 sales

<u>Preferred Option – Geologic Storage of CO_2</u>

There is support for geologic storage of the CO_2, in proximity (or as close as possible) to the project site

Preliminary work by both the Pennsylvania Geologic Survey and the DOE-Battelle Regional Carbon Sequestration Partnership indicates that sub-surface conditions in Southwestern PA should provide opportunities for (deep) geologic sequestration

A major company has expressed interest in the development of a regional CO_2 Geologic Sequestration Hub, which would accept CO_2 from several regional projects, with CONSOL's Advanced PFBC project potentially serving as the "anchor tenant"

Geologic storage is likely to provide the best combination of economic support and operational logistics for ongoing disposition of ~2.5 MM tons CO_2 per year.

Other Considerations: Grid Interconnection

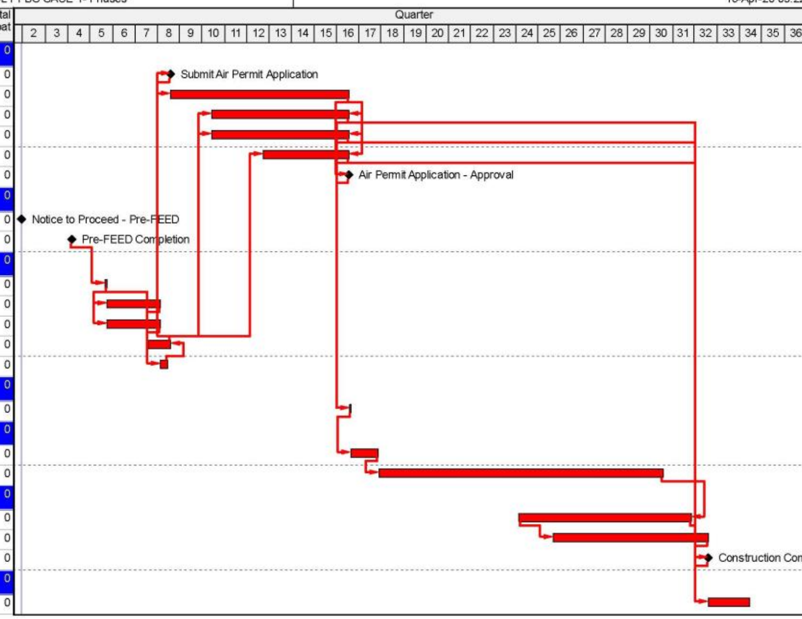
- Proposed sites located within the PJM Interconnection
- Steps include:
  - Interconnection Request
  - Feasibility Study
  - Impact Study
  - Facility Study
  - Construction Service Agreement
- Overall timeline for PJM Interconnect is estimated at ~**36 months**

CONSOL ENERGY

Project Timeline – Critical Path Overview

CONSOL-PFBC COAL-BASED - FEED/DET ENG/CONSTRUCTION — CONSOL PFBC CASE 1- Phases — 16-Apr-20 09:22

Activity ID	Activity Name	Original Duration (Days)	Start	Finish	Total Float
REGULATORY / FINANCING		520	26-May-21	23-May-23	0
10375	Submit Air Permit Application	0	26-May-21		0
10135	Air Permit Application - Review and Approval	520	26-May-21	23-May-23	0
10775	CO2 Off Take Agreement	400	10-Nov-21	23-May-23	0
10785	Power Purchase Agreement	400	10-Nov-21	23-May-23	0
10795	Financing Application & Approval	250	08-Jun-22	23-May-23	0
10145	Air Permit Application - Approval	0		23-May-23	0
PHASE II - Pre-FEED Activities		145	23-Sep-19	17-Apr-20	0
LN0020	Notice to Proceed - Pre-FEED	0	23-Sep-19*		0
PM10006	Pre-FEED Completion	0		17-Apr-20*	0
PHASE III - FEED Activities		185	01-Sep-20	25-May-21	0
10105	Kick-Off Meeting - FEED	5	01-Sep-20	08-Sep-20	0
10115	Initial Design Studies	150	09-Sep-20	13-Apr-21	0
10905	Site Selection	150	09-Sep-20	13-Apr-21	0
10125	Prepare & Submit Air Permit Application	65	24-Feb-21	25-May-21	0
10355	Design Basis Document (Incl Acceptance of Recommendations fro	20	14-Apr-21	11-May-21	0
PHASE IV - Detailed Engineering		5	24-May-23	30-May-23	0
10445	Kick-Off Meeting - Detailed Engineering FEED	5	24-May-23	30-May-23	0
PROCUREMENT		910	31-May-23	24-Nov-26	0
10255	Confirm Bid & Award PO - PFBC Vessel	80	31-May-23	19-Sep-23	0
10305	Fab & Deliver - PFBC Vessel	830	20-Sep-23	24-Nov-26	0
CONSTRUCTION		550	16-Apr-25	25-May-27	0
10745	Mechanical & Piping - Construction	500	16-Apr-25	16-Mar-27	0
10755	Electrical & Instrumentation - Construction	450	03-Sep-25	25-May-27	0
10765	Construction Completion	0		25-May-27	0
START-UP / COMMISSIONING		120	26-May-27	09-Nov-27	0
10655	Start-Up	120	26-May-27	09-Nov-27	0



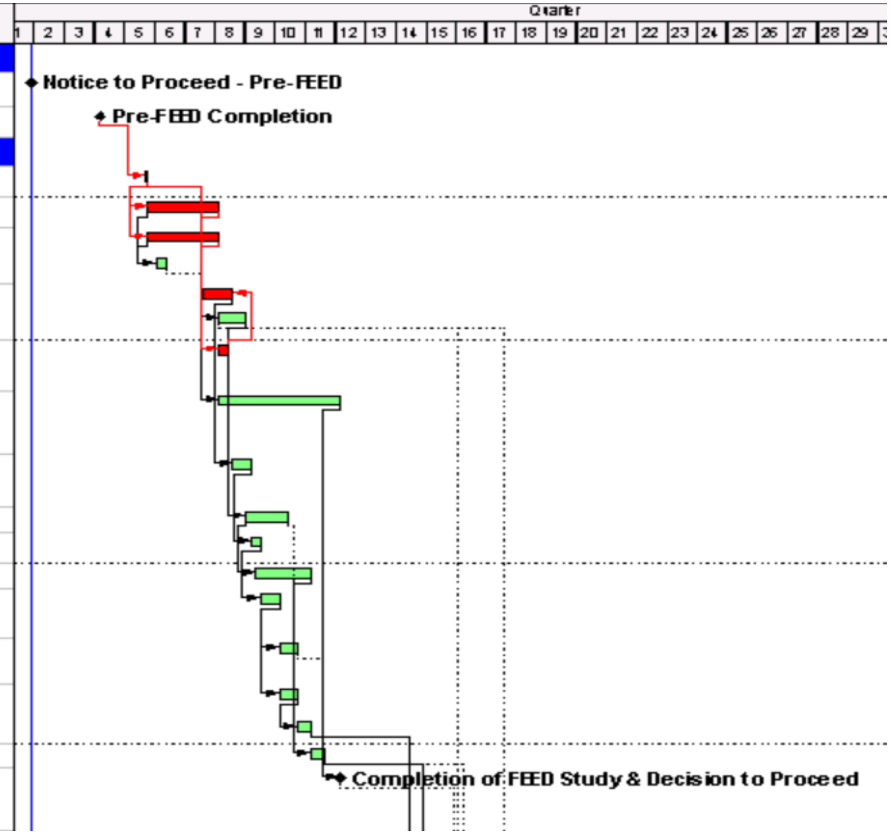
Remaining Level of Effort — Remaining Work
Actual Level of Effort — Critical Remaining Work
Actual Work — ◆ Milestone

Coal Based Power Plant of The Future
CONSOL PFBC CASE 1
CRITICAL PATH SCHEDULE

TASK filter: Critical.

Project Timeline – FEED Study

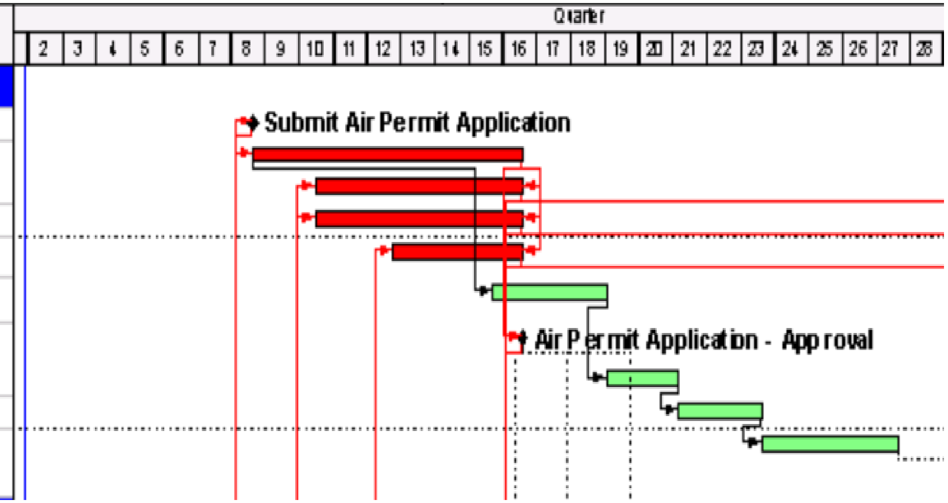
Activity Name	Orig Dur (Days)	Start	Finish
PHASE I - Pre-FEED Activities	**145**	**23-Sep-19**	**17-Apr-20**
Notice to Proceed - Pre-FEED	0	23-Sep-19*	
Pre-FEED Completion	0		17-Apr-20*
PHASE II - FEED Activities	**415**	**01-Sep-20**	**12-Apr-22**
Kick-Off Meeting - FEED	5	01-Sep-20	08-Sep-20
Initial Design Studies	150	09-Sep-20	13-Apr-21
Site Selection	150	09-Sep-20	13-Apr-21
Value Engineering - Cost Reduction Efforts	20	07-Oct-20	03-Nov-20
Prepare & Submit Air Permit Application	65	24-Feb-21	25-May-21
Geotechnical Testing / Site Survey	60	14-Apr-21	06-Jul-21
Design Basis Document (Incl Acceptance of Recommendations from Initial Design Studies)	20	14-Apr-21	11-May-21
Develop Fuel / Sorbent Prep / Feed System Design (Farnham & Pfile)	260	14-Apr-21	12-Apr-22
Select Critical Eqpt Vendors (CO2 Capture, Gas Turbo, Steam TG)	40	26-May-21	20-Jul-21
Grading & Drainage Design	90	07-Jul-21	09-Nov-21
Heat & Material Balances / Water Balances	20	21-Jul-21	17-Aug-21
U/G - Elec Duct Runs, Piping & Sewers	120	04-Aug-21	18-Jan-22
Develop Preliminary GA Drawings and 3-D CAD Model	40	18-Aug-21	12-Oct-21
Develop & Issue PFDs, P&IDs & System Descriptions	40	13-Oct-21	07-Dec-21
Develop Preliminary Civil & Foundation Design	40	13-Oct-21	07-Dec-21
Develop Initial Foundations (PFBC) Bid Package	30	08-Dec-21	18-Jan-22
Develop Civil Sitework Bid Package	30	19-Jan-22	01-Mar-22
Completion of FEED Study & Decision to Proceed	0		12-Apr-22



- Project must select critical vendors and be able to fund their participation in FEED.
- Initial design studies and value engineering must define key aspects of the plant: (MWe rating and operating modes, fuel specification, etc.)
- Early site selection facilitates the entire process

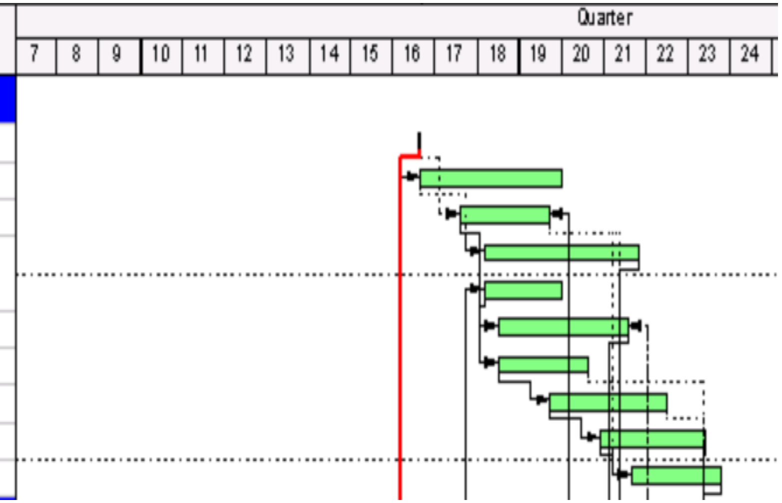
Project Timeline – Regulatory / Financing

Activity Name	Orig Dur (Days)	Start	Finish
REGULATORY / FINANCING	**1240**	**26-May-21**	**24-Feb-26**
Submit Air Permit Application	0	26-May-21	
Air Permit Application - Review and Approval	520	26-May-21	23-May-23
CO2 Off Take Agreement	400	10-Nov-21	23-May-23
Power Purchase Agreement	400	10-Nov-21	23-May-23
Financing Application & Approval	250	08-Jun-22	23-May-23
PJM Interconnect- Feasibility Studies	220	01-Mar-23	02-Jan-24
Air Permit Application - Approval	0		23-May-23
PJM Interconnect - System Impact Studies	140	03-Jan-24	16-Jul-24
PJM Interconnect - Facilities Studies	160	17-Jul-24	25-Feb-25
PJM Interconnect - Applicable Service Agreement	260	26-Feb-25	24-Feb-26



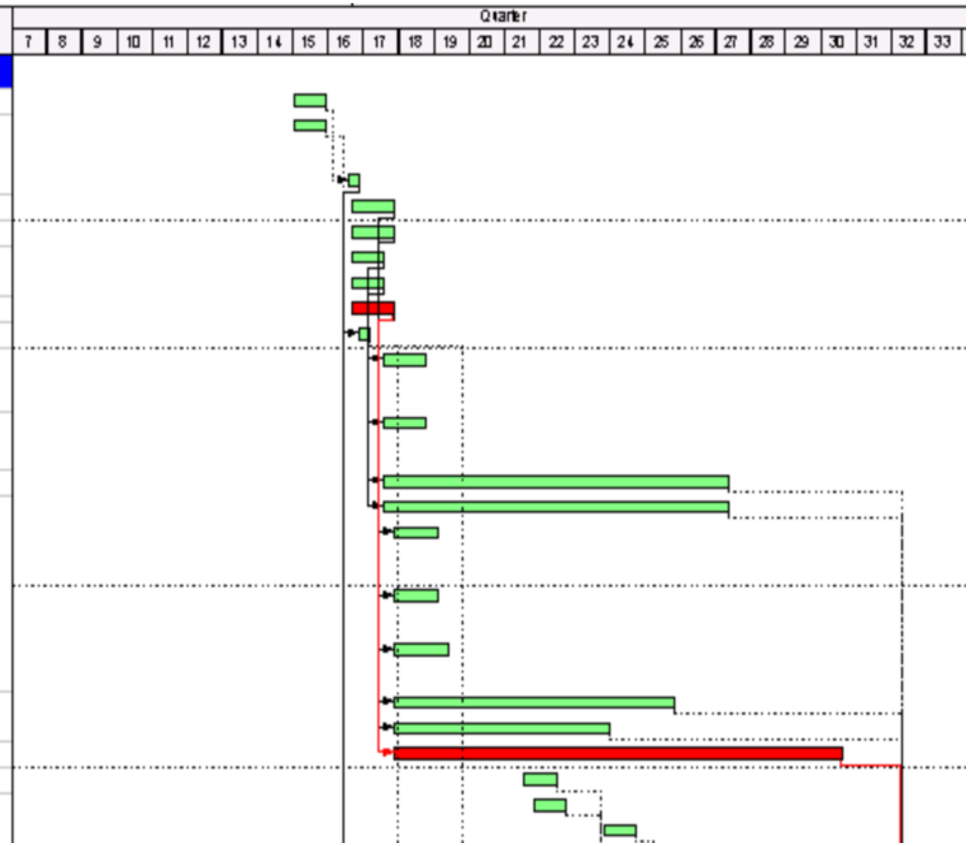
Project Timeline – Detailed Engineering

Activity Name	Orig Dur (Days)	Start	Finish
PHASE IV - Detailed Engineering	473	24-May-23	14-Mar-25
Kick-Off Meeting - Detailed Engineering FEED	5	24-May-23	30-May-23
Develop General Arrangements	220	31-May-23	02-Apr-24
Develop & Issue P&IDs	140	23-Aug-23	05-Mar-24
Piping Design	240	18-Oct-23	17-Sep-24
Foundation Design	120	18-Oct-23	02-Apr-24
Steel Design	200	15-Nov-23	20-Aug-24
Develop & Issue Single Lines	140	15-Nov-23	28-May-24
Develop & Issue Electrical Physical Drawings	180	06-Mar-24	12-Nov-24
Develop & Issue Wiring Diagrams	160	26-Jun-24	04-Feb-25
Control Systems Design	140	02-Sep-24	14-Mar-25



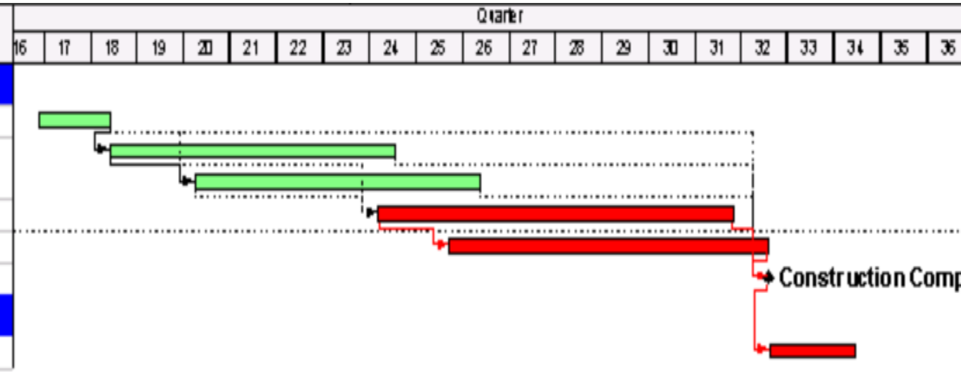
Project Timeline – Procurement

Activity Name	Orig Dur (Days)	Start	Finish
PROCUREMENT	**1015**	**04-Jan-23**	**24-Nov-26**
Bid & Recommend Contractor - Sitework Contract	60	04-Jan-23	28-Mar-23
Bid & Recommend Contractor - PFBC Foundation Contract	60	04-Jan-23	28-Mar-23
Confirm Bid & Award Sitework Contract	20	24-May-23	20-Jun-23
Confirm Bid & Award PO - Amine Capture System	80	31-May-23	19-Sep-23
Confirm Bid & Award PO - Hot Gas Filters	80	31-May-23	19-Sep-23
Confirm Bid & Award PO - Steam Turbine	60	31-May-23	22-Aug-23
Confirm Bid & Award PO - Gas Turbine	60	31-May-23	22-Aug-23
Confirm Bid & Award PO - PFBC Vessel	80	31-May-23	19-Sep-23
Confirm Bid & Award PFBC Foundation Contract	20	21-Jun-23	18-Jul-23
Steam Turbine - Receive Final Vendor Drawings/Documents	80	23-Aug-23	12-Dec-23
Gas Turbine - Receive Final Vendor Drawings/Documents	80	23-Aug-23	12-Dec-23
Fab & Deliver - Steam Turbine	640	23-Aug-23	03-Feb-26
Fab & Deliver - Gas Turbine	640	23-Aug-23	03-Feb-26
Amine Capture- Receive Final Vendor Drawings/Documents	80	20-Sep-23	09-Jan-24
Hot Gas Filters - Receive Final Vendor Drawings/Documents	80	20-Sep-23	09-Jan-24
PFBC Vessel - Receive Final Vendor Drawings/Documents	100	20-Sep-23	06-Feb-24
Fab & Deliver - Amine Capture System	520	20-Sep-23	16-Sep-25
Fab & Deliver - Hot Gas Filters	400	20-Sep-23	01-Apr-25
Fab & Deliver - PFBC Vessel	830	20-Sep-23	24-Nov-26
Bid & Award Structural Contract	60	21-Aug-24	12-Nov-24
Bid & Award /Mechanical/Piping Contract	60	18-Sep-24	10-Dec-24
Bid & Award Electrical & Instrumentation Contract	60	17-Mar-25	06-Jun-25



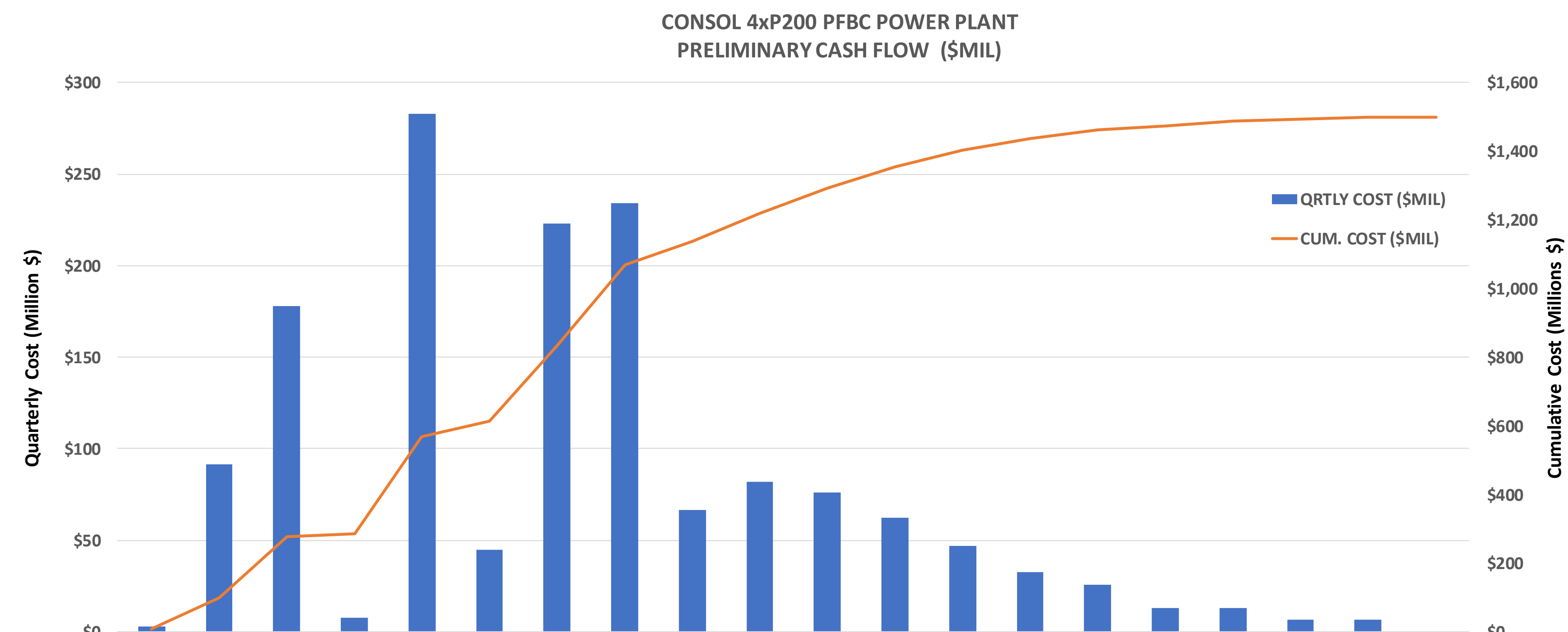
Project Timeline – Construction / Start-Up / Commissioning

Activity Name	Orig Dur (Days)	Start	Finish
CONSTRUCTION	1025	21-Jun-23	25-May-27
Sitework - Construction	100	21-Jun-23	07-Nov-23
Foundations - Construction	400	08-Nov-23	20-May-25
Structural Steel - Construction	400	24-Apr-24	04-Nov-25
Mechanical & Piping - Construction	500	16-Apr-25	16-Mar-27
Electrical & Instrumentation - Construction	450	03-Sep-25	25-May-27
Construction Completion	0		25-May-27
START-UP / COMMISSIONING	120	26-May-27	09-Nov-27
Start-Up	120	26-May-27	09-Nov-27



CONSOL ENERGY

Projected Timing of Cash Flows*



	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Q3 2026	Q4 2026	Q1 2027	Q2 2027	Q3 2027	Q4 2027
' COST ($MIL)	$3.0	$91.2	$177.7	$7.7	$283.1	$45.0	$222.8	$234.3	$66.8	$81.7	$75.9	$62.2	$47.1	$32.7	$25.5	$12.8	$12.8	$6.4	$6.4	$0.0
COST ($MIL)	$8.0	$99.2	$277.0	$284.7	$567.8	$612.8	$835.6	$1,069.	$1,136.	$1,218.	$1,294.	$1,356.	$1,403.	$1,436.	$1,461.	$1,474.	$1,487.	$1,493.	$1,500.	$1,500.

Capital expenditures are projected to be distributed ~19% in 2023, ~52% in 2024, ~19% in 2025, ~8% in 2026, and ~2% in 2027, assuming the project schedule presented on the previous slides holds. Expenditures begin with commencement of Detailed Design.

*Based on schedule as of March 10, 2020

Next Steps

- Complete capital and operating cost estimates
- Update business case to incorporate cost estimates
- Complete/submit final report for Pre-FEED Phase (4/17/2020)
- Continue to evaluate options for plant site, CO_2 disposition, power supply, biomass sourcing, and project financing
- Pursue FEED study