

Renewable Natural Gas Request for Proposals

Responses to Questions Received

Monday, March 10, 2025

PURPOSE: Provide responses to questions asked regarding the Renewable Natural Gas (RNG) Request for Proposals (RFP), issued by the Philadelphia Energy Authority (PEA) – more information can be found [here](#). Questions for this RFP were due on Friday, February 21st, 2025, and answers to these questions are due (to be posted on PEA’s website) by March 10, 2025.

ABBREVIATIONS TABLE

Abbreviation	Definition
BOD	Biochemical Oxygen Demand
BRC	Biosolids Recycling Center
CCF	Centum Cubic Foot
CFM	Cubic Feet Per Minute
CFR	Code of Federal Regulations
COD	Chemical Oxygen Demand
Cogen	Biogas Cogeneration Facility at the PWD NEWPCP
CSO	Combined Sewer Overflow
CY	Calendar Year
DMR	Discharge Monitoring Report
DRBC	Delaware River Basin Commission
ECM	Energy Conservation Measure
EV	Electric Vehicle
FOG	Fats, Oils, & Grease
GESA	Guaranteed Energy Savings Act
GHG	Greenhouse Gas
GPM	Gallons Per Minute
HP	Horsepower
HVAC	Heating, Ventilation, and Air Conditioning
kW	Kilowatt
LDC	
MAOP	Maximum Allowable Operating Pressure
M&V	Measurement and Verification
MGD	Million Gallons Per Day
MMBtu	Million British Thermal Units
NDA	Non-Disclosure Agreement

Abbreviation	Definition
NEWPCP	Northeast Water Pollution Control Plant
NPDES	National Pollutant Discharge Elimination System
O&M	Operations & Maintenance
PAIEUG	Philadelphia Area Industrial Energy Users Group
PCB	Polychlorinated Biphenyls
PE (*material)	Polyethylene
PEA	Philadelphia Energy Authority
PGW	Philadelphia Gas Works
PS	Primary Sludge
PSIG	Pounds Per Square Inch Gauge
PUC	Public Utility Commission
PWD	Philadelphia Water Department
RFI	Request for Information
RFP	Request for Proposals
RISE	Reducing Industrial Sector Emissions
RNG	Renewable Natural Gas
SCADA	Supervisory Control and Data Acquisition
SWWPCP	Southwest Water Pollution Control Plant
TMDL	Total Maximum Daily Load
TS	Total Solids
TSS	Total Suspended Solids
TVS	Total Volatile Solids
VS	Volatile Solids
WAS	Waste Activated Sludge
WPCP	Water Pollution Control Plant

QUESTIONS

General

1. Beyond biogas processing, is PWD interested in improving existing digester performance? Is PWD interested in co-digestion of other waste streams or feedstocks?

A: Yes, PWD is open to, and is looking for, opportunities to improve its current digester performance. PWD is also open to options that would propose co-digestion of other waste streams or feedstocks.

2. Does PGW currently procure RNG or have RNG interconnections?

A: No, PGW does not currently have any RNG interconnections, nor does it purchase RNG for its supply portfolio. PGW is required by the Pennsylvania Public Utility Commission (PUC) to purchase least cost gas. There may be opportunities to accept RNG molecules into its distribution system, through new interconnections, for the sake of providing offtake for RNG molecules and generation of RNG credits.

3. Does PGW have publicly available RNG gas quality standards?

A: No, PGW does not have publicly available RNG gas quality standards. PGW will work to issue a standard that is safe, clean, reliable, and fair for both Philadelphia Gas Work's customers and future suppliers, if required.

4. If upgrading the biogas for sale to PGW created more value as a productive end use than power generation, would PWD hypothetically consider shutting down their Cogen?

A: The project team is looking for, and is open to, any and all proposals and evaluations that best meet the stated goals and objectives, as outlined in the GESA RFP and summarized in the pre-proposal presentation slides.

5. Are there any social or community issues, or specific items that proposers should be aware of for this project, outside of workforce planning?

A: No.

6. Should proposers assume their proposals will be piloted first?

A: No.

7. Is the procurement team considering proposals for energy conservation measures or efficiency measures of current operations?

A: Yes, energy conservation and improved efficiency of existing equipment and processes is in this scope, and a desired outcome of this RFP.

8. What is the price that PGW will offer to PWD for cleaned biogas?

A: PGW, as all LDCs in Pennsylvania, must abide to the least cost mandate set by the Pennsylvania PUC. Any gas purchased by PGW must be least cost. For the sole purpose of proposal consistency, market price for pipeline quality RNG should be assumed to be \$25/MMBtu.

9. For projects that have not started construction, can they count towards savings versus current baseline?

A: Projects must be incorporated into the GESA Investment Grade Audit and agreed upon scope of work to be counted toward GESA savings and 20-year performance guarantee.

10. Can PWD share the equipment lists?

A: Please refer to RFP Attachments B-5 and B-6 (process flow diagrams) to understand the existing equipment.

11. Can PWD share more details on capital improvement lists?

A: PWD is unable to share capital improvement plans at this time.

12. Do all ECMs being proposed need to be piloted, or launched at small scale initially, for PWD?

A: Given previous project issues, the general approach tends to be cautious. The approach for any ECM will need to be discussed on a project-by-project basis.

13. Are the lagoons still being used for anything?

A: No.

14. Is there a regulated gas rate PWD has with PAIG? [*PWD is assuming this is PAIEUG]

A: Yes, PWD has a regulated gas rate through PGW. For the interruptible transmission (IT) accounts at NE and BRC, natural gas supply is purchased through a 3rd party supplier. Rates are

based on market rate when we hedge as well as PGW’s distribution fees which are outlined in the PGW tariff. Natural gas from all other meters is charged based on the PGW tariff (link: <https://www.pgworks.com/customer-care/your-business/tariffs>).

15. Is PWD more interested in centralized or decentralized biosolids processing?

A: At this time, PWD is undecided and open to centralized, decentralized, or a hybrid of the two for biosolids processing.

16. Will PWD share the following data for the last three years?

Locations	Parameters
▶ WPCP influent	▶ Flow
▶ Primary sludge and primary effluent	▶ BOD
▶ WAS, thickened PS and WAS flows	▶ TSS,
▶ Mixed sludge (digester feed)	▶ %TS
▶ Digested sludge	▶ %VS
▶ Dewatered cake (with hauled solids wet and dry tons)	▶ COD
	▶ Ammonia
	▶ Phosphorus

A: PWD declines to provide this information before proposal selection.

17. Will PWD share one year of dewatered cake sampling data, including metals, nutrients, and other relevant data?

A: PWD declines to provide this information before proposal selection.

18. Will PWD share solids production, final deposition, and cost data from 2022 – 2024?

A: PWD declines to provide this information before proposal selection.

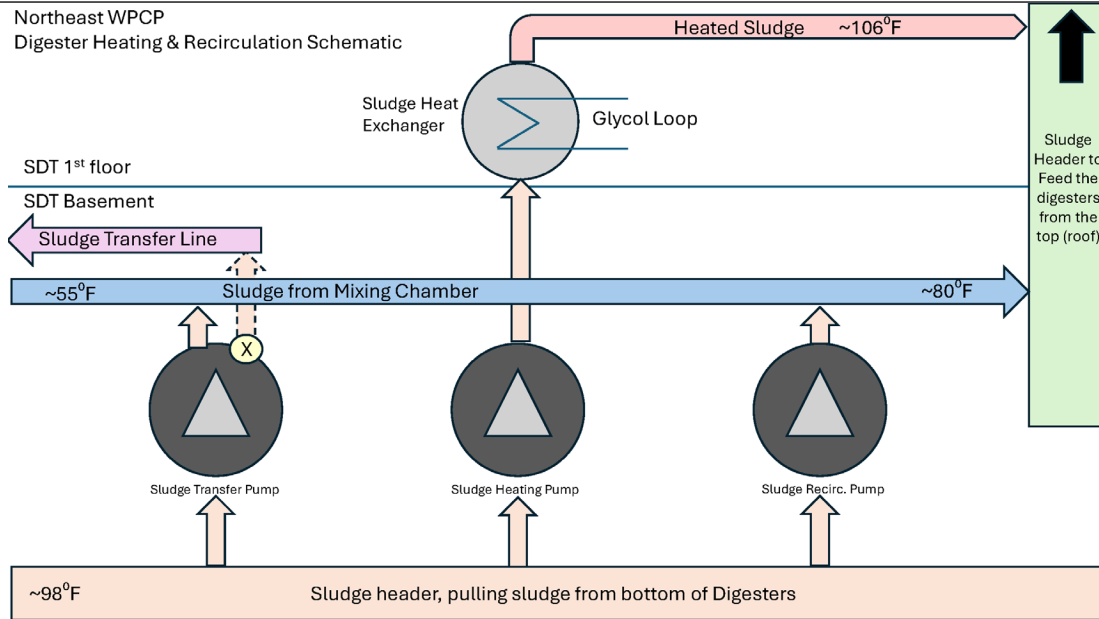
19. How is PWD currently mixing the digesters?

A: Mixing of the digesters is achieved through sludge recirculating and sludge heating pumps.

The sludge recirculating pump provides continuous sludge circulation to keep digester contents well mixed and to prevent heavy solids accumulating in the bottom of the tank. The sludge recirculating pump draws suction from the bottom of the conical portion of the digester and pumps sludge back up to the top of the tank.

The sludge heating pump provides a continuous sludge flow to the sludge heat exchanger for each digester, as well as another means of circulating sludge to ensure the contents of the digester are well mixed. The sludge heating pump draws suction from the bottom of the conical portion of the digester and pumps sludge through the sludge heat exchanger and back into the top of the tank.

A schematic of the NEWPCP digesters heating and recirculation is provided below; the process flow is similar for the SWWPCP.



20. Is there any existing electrical sub-metering in place? If yes, can you provide data?

A: There is no existing electrical sub-metering in place.

21. Is SCADA history data for pump hours, compressor hours, etc., available?

A: PWD declines to provide this information before proposal selection.

22. Can PWD provide drawings indicating equipment sizes, design capacities, HP, GPM, CFM, etc., and mechanical schedules for HVAC and process equipment for both facilities?

A: PWD declines to provide this information before proposal selection.

23. Can PWD provide O&M manuals for both facilities?

A: PWD declines to provide this information before proposal selection.

24. Historically, what has been implemented to remove or prevent trash from getting into the process at both plants?

A: Both plants utilize mechanically cleaned coarse bar screens during preliminary treatment, prior to grit removal. The SWWPCP also has two manually cleaned trash racks at the inlet of its low level Influent Pumping Station. Lastly, the SWWPCP is trialing and has seen great success with a sludge screen on one of its primary sludge lines to remove trash at this stage of the treatment process (just prior to anaerobic digestion).

25. How much biogas is produced at each WPCP?

A: Refer to RFP Attachment C, Biogas End Uses (FY2023) worksheet.

26. Can PWD provide their latest Wastewater Master Plan?

A: PWD declines to provide this information before proposal selection.

27. Please provide 12 months of DMRs for both facilities.

A: All publicly available discharge monitoring reporting data can be found on the Pennsylvania Department of Environmental Protection's e-DMR website:

<http://cedatareporting.pa.gov/Reportserver/Pages/ReportViewer.aspx?/Public/DEP/CW/SSRS/EDMR>. Daily DMR and process monitoring data will not be provided before proposal selection.

28. The request for proposal (RFP) asks that proposals do not exceed 10MB to ensure email delivery. Considering the nature and scale of potential ECMs, and the benefit of certain graphical content enhancing depiction of site-specific technical aspects – would PEA and the City allow proposals to exceed 10MB if a link to a large file sharing site was provided?

A: Yes.

29. Can the PowerPoints reviewed at the NEWPCP and SWWPCP walkthroughs be shared?

A: Yes – document shared on 3/11/2025.

30. Can monthly electric bills be provided (preferably for years 2022 – 2024)?

A: PWD declines to provide this information before proposal selection.

31. Is FOG received at the NEWPCP or SWWPCP? If yes, please provide daily volumes, characteristics (type, %TS, %VS), and indicate where FOG is received on a process flow diagram.

A: Beyond the normal wastewater process, a separate source of FOG is not received at the NEWPCP or SWWPCP.

32. How should we incorporate RISE PA considerations into our proposal?

A: RISE PA is administered by the Commonwealth of Pennsylvania; proposers can review publicly available grant guidelines to inform their proposals, found here:

<https://www.pa.gov/agencies/dep/programs-and-services/energy-programs-office/rise-pa.html>. RISE PA requires substantial GHG emissions reduction for eligible projects, which may inform responses to this RFP.

33. Given past mixing issues, to expedite the project, can one of the proposers come in to install mixers?

A: No, this would not be allowable due to the capital contracting process that PWD must follow.

34. Is capital cost avoidance permitted on this project?

A: We are open to capital cost avoidance in the proposals and are interested in seeing how it would be approached.

35. This question refers to the FINAL-Attachment-A-1-Technical-Submittal-Worksheet, specifically the Project Costs tab: Is the intent that the Phase 1: Project Development fee, the Phase 2: Implementation fee and the Phase 3: Measurement and Verification include the overhead and profit shown in row 47? Or is the intent that the overhead & profit shown in row 47 is in addition to the Grand Total Sell Price shown in row 45?

A: The Phases should include the overhead and profit. Row 47 should show these figures split out. Row 45 should show the total cost, inclusive of all figures, of the Project.

36. This question refers to the FINAL-Attachment-A-1-Technical-Submittal-Worksheet, specifically the Project Costs tab: The Phase 3: Measurement and Verification services occur on an annual basis. They are not typically included as part of the total installed cost price. Is the assumption that the Grand Total price will include three years of M&V, or will these annual service costs be accounted for separately?

A: Due to the nature of a Guaranteed Energy Savings Act project, these M&V costs should be included the Grand Total Price.

37. Attachment B-2, columns J and K, both are titled, “Total Facility4 (kWh)”, but the contents between the two columns are different. What is each column/what is the difference between the two columns?

A: Column K is the correct data. Please ignore the data in Column J.

38. For modeling purposes, if PGW wants to buy the brown gas, what rate should we assume?

A: Please refer to the “General” section, question 8, for this response.


39. Please provide the stage of design for any of the requested energy conservation measures listed in Attachment D.

A: PWD declines to provide this information before proposal selection.

40. Can we set up individual site visits to obtain additional information?

A: No. The pre-scheduled site visits were the only opportunity to visit the sites.

41. Can PWD provide plant maps with building locations and names for both NEWPCP and SWWPCP?

A:  document shared on 3/11/2025.

42. Can PWD provide more information on existing buildings at the NEWPCP and SWWPCP, such as drawings indicating existing lighting fixtures and/or lighting line by line audit?

A: PWD declines to provide this information before proposal selection.

43. What is the current power demand for each plant’s anaerobic digestion mixing process?

A: This demand data is not available as there is no electrical submetering at either facility. Total demand data for each WPCP is listed Question #10 of the SW WPCP section of this document.

44. Please indicate the approximate location available for a potential biogas utilization facility at each site.

A: There is no specific site designated for a potential biogas utilization facility at either site. However, all of the available square footage for each facility was provided in the 2023 RFI Q&A (https://philaenergy.org/wp-content/uploads/2023/02/RNG-RFI-Questions_and_Responses_20230221.pdf).

45. Can PWD provide monthly flow data for each plant that corresponds to the utility data provided (million gallons/month)?

A: All publicly available discharge monitoring reporting data, including monthly flow data, can be found on the Pennsylvania Department of Environmental Protection’s e-DMR website: <http://cedatareporting.pa.gov/Reportserver/Pages/ReportViewer.aspx?/Public/DEP/CW/SSRS/EDMR>. Daily DMR and process monitoring data will not be provided before proposal selection.

46. What is the scope of regulatory requirements for PWD’s WPCPs?

A: Regulatory requirements for PWD’s WPCPs can be sorted into three categories:

- ▶ Effluent Discharged to the Delaware River:
 - NPDES effluent requirements
 - NPDES CSO requirements
 - NPDES PCB TMDLs
 - NPDES local limits analyses requirements
 - DRBC docket

- ▶ Air Emissions from WPCPs
 - NEWPCP Title V/State Operating Permit
 - SWWPCP Synthetic Minor Operating Permit
 - BRC Air Permit
 - New Air Pollution Source Registration
- ▶ Biosolids Applied to Farmland
 - NPDES Solids Management Plan
 - General Permit for Beneficial Use of Biosolids by Land Application
 - General Permit for Beneficial Use of Exceptional Quality Biosolids
 - Hazardous Waste Characterization Certification
 - CFR Title 40 Part 503.

47. Can PWD please provide its existing air permits for its WPCPs?

A: PWD declines to provide this information before proposal selection.

48. Can PWD please provide 24 months of energy use data (electricity, natural gas) at the BRC?

A: See attached excel file which includes SW + BRC energy use data for CY2022, CY2023, and CY2024.

NEWPCP

1. Is there a requirement for how much the Cogen engines need to be utilized, or how much biogas must flow to the Cogen?

A: No. Proposers are welcome to submit an economic analysis, as part of their proposal, for increased or decreased use of the Cogen engines.

2. Does PWD have a plan to add a 5th engine to the Cogen?

A: No, not at this time.

3. Can you describe the size and operating pressure of the PGW natural gas pipelines that supply or are near to the NEWPCP?

A: PGW operates two separate pipelines on this facility:

Pipeline	Parameter	Value
1	MAOP	150 PSIG
	Diameter	6"
	Material	Steel
2	MAOP	35 PSIG
	Diameter	6"
	Material	PE

4. Where does the exhaust gas go from the Cogen?

A: 450 deg C exhaust gas passes through a selective catalytic reduction (SCR) system before entering an exhaust gas heat exchanger that heats the high temperature glycol loop, which in turn heats the hot water system at the NEWPCP. The exhaust gas then discharges to the atmosphere.

5. It was noted that PWD plans to increase the plant capacity from 435 MD to 650 MGD, by 2031. Is that for stormwater capacity or increases in sewage processing?

A: The described increase in capacity from 435 MGD to 650 MGD is specific to the NEWPCP’s peak permitted capacity, i.e., stormwater capacity as described in the question. This is not a flow rate that will be observed every day, and it is not anticipated to have a significant impact on biogas or daily operational energy consumption (it will only increase energy consumption during wet weather events).

6. Is there physical room to put in a dedicated food waste digester at this facility?

A: PWD has not reserved a footprint specifically for food waste co-digestion; however, there is space at the NEWPCP for additional capital projects that can be considered holistically in the context of the plant.

7. What is the typical % solids going into the digesters?

A: Typically, around 4% total solids and 70% total volatile solids (~5-year average, based on 1/1/2020 – present).

8. Is there excess heat output from the Cogen during the summer?

A: Yes, a temperature control valve is utilized/excess heat is dissipated via radiators outside of the Cogen.

9. Does the NEWPCP receive sludge at this location?

A: No, only sludge generated at the NEWPCP is processed and managed at this facility.

10. Are barges separated by type of sludge?

A: No, all barged sludge is digested sludge.

11. Can PWD share meter locations and information?

A: Meter locations and information were shared earlier in the RFP process; refer to Attachment B-1.

12. Can details be shared on PWD’s current tariff agreement?

A: See attached excel file which includes energy use data for CY2022, CY2023, and CY2024. Natural gas is billed per the PGW tariff.

13. What is the range of power consumption?

A: Please see below. Note, we anticipate a future demand jump when a significant number of EV chargers are installed over the next 5-10 years.

	CY2023	CY2024
Minimum	4,635 kW	4,417 kW
Maximum	6,608 kW	6,606 kW
Average	5,629 kW	5,042 kW

14. When was the last time that any of the digesters were cleaned?

A: PWD has a routine digester cleaning program at each of the plants, aiming for digesters to be cleaned every four years. Below are summary tables of the last digester cleaning for each plant.

Table 1: NEWPCP Digester and Sludge Transfer Tank Cleaning Summary*

Digester/Tank	#	Date of Last Cleaning Completion
Transfer Tank	1	March 2023
Transfer Tank	2	November 2022
Digester	9	October 2024
Digester	10	January 2021
Digester	11	April 2023
Digester	12	July 2020
Digester	13	August 2022
Digester	14	June 2022
Digester	15	October 2022
Digester	16	June 2023

*Note that NEWPCP has eight digesters that are numbered starting at No. 9.

15. Please provide the operating temperature of the digesters.

A: The setpoint for the digesters is 98°F, but an acceptable operating range is 95 – 100°F.

16. In Attachment D, the scope for NEWPCP, item 2, includes, “Replacement of Heat, Transfer, and Recirculation Pumps”. Are these a single set of pumps with multiple functions, or are these three sets of pumps (i.e., heat pumps, transfer pumps, and recirculating pumps)? What upgrades are being referred to?

A: Please refer to Question #19 in the **General** section. The pumps are operating right now but will need to be replaced eventually.

17. Can PWD provide size/square footage of buildings?

NEWPCP		
Process Area/Building	Sub-building Name	Roof Area (SF)
Primary Sedimentation Tanks Set 1	Influent Building	12,000
	Effluent Building	21,000
	Electrical Building	3,000
	Gallery	NA
	Total	36,000
Preliminary Treatment Building	--	62,000
Electrical Building	--	6,000
Chlorination Facility	Effluent Water Pump Station	7,000
	Sodium Hypochlorite Building	4,000
	Total	11,000
Scum Disposal Facility	--	10,000
Blower Building	--	18,000
Final Sedimentation Tanks Set 1	Access Building No. 1	5,000
	Access Building No. 2	2,000
	Access Building No. 3	1,000
	Gallery	NA

NEWPCP		
Process Area/Building	Sub-building Name	Roof Area (SF)
	Total	8,000
Final Sedimentation Tanks Set 2	Access Building No. 1	1,000
	Access Building No. 2	3,000
	Total	4,000
Sludge Thickener Building	--	97,000
Sludge Digestion and Gas Facilities	Sludge Digesters	107,000
	Sludge Gas Compressor Building	5,000
	Waste Gas Burner Building	1,000
	Total	113,000
Sludge Transfer Station	--	23,000
Administration Building	--	32,000
Equipment Storage Building	--	8,000
Information Technology Building	--	2,000
Maintenance Planning Center	--	6,000
Maintenance Supervisor Center	--	1,000
Materials Management Northeast Storeroom	--	7,000
Old HVAC Shop	--	2,000
Storage Building	--	6,000
Warehouse	--	10,000


18. What kind of roofs do the anaerobic digesters have?

A: Flat, concrete.

19. What are the dimensions of each of the anaerobic digesters?

Location	Measurement
Digester Inside Diameter	110'-0"
Underside of Digester Roof to Floor (@ Sidewall)	38'-6 1/2"
Sidewater Depth at Tank Edge to Invert of Overflow	32'-0"
Sidewater Depth at Tank Edge (Normal Operating Level)	30'-0"
Sidewater Depth at Tank Edge (Minimum Normal Operating Level)	27'-0"
Sidewater Depth at Tank Edge (Maximum Normal Operating Level)	32'-0"
Underside of Digester roof to invert of cone (@ center)	44'-1/2"
Cone Slope (H:V)	10:1
Cone Depth	5'-6"
Digester Volume to Normal Operating Level of 30' at Digester Edge	
Cone Volume	0.13 Million Gallons
Cylinder Volume	2.13 Million Gallons
Total Volume	2.26 Million Gallons

20. Are there any survey/geotechnical results at NEWPCP that can be provided?

A:  document shared on 3/11/2025.

21. Regarding “Replacement of Heat, Transfer, and Recirculation Pumps”, can PWD provide more detail on the existing pumps (HP, flow, etc.)?

A: Please refer to Question #19 in the **General** section. More details will not be provided before proposal selection.

22. Regarding “Installation of additional density meters in sludge lines and the Gravity Thickener Tanks”, can PWD indicate where in the process these will be installed (size, photos)?

A: For the Digesters, density meters could be installed immediately before/after the Digester Inlet Valves (DIVs). For the Gravity Thickener building, they could be installed on the thickened sludge transfer line between each tank and the thickened sludge wet well. More details will not be provided before proposal selection.

23. Regarding “Installation of sludge feed totalizers on each of the digesters”, can PWD indicate where in the process these will be installed (size, photos)?

A: Ideally, these would be installed immediately before/after the Digester Inlet Valves. Pictures will not be provided before proposal selection.

24. Regarding “Installation of a new scum box chopper pump in the Gravity Thickener Building, can PWD provide more details on the existing pumps (photos, HP, flow, etc.)?”

A: Each scum well has a 7.5 HP belt-driven screw centrifugal scum pump which pumps the scum to the Scum Disposal Facility for further concentrating.


25. Regarding “Installation of sludge blanket sensors on final tanks”, can PWD provide some context as to the importance of implementing this?

A: Tracking sludge levels in the final tanks allows the plant to prevent sludge bulking or rising, optimize polymer usage, and ensure that the effluent remains clean and meets regulatory standards.

26. Regarding “Evaluate sludge screening throughout the plant”, can PWD provide more detail on what is required here and provide context by conveying any current issues?

A: More details will not be provided before proposal selection.

27. Regarding “Evaluate transformer capacity for possible replacement at sludge buildings”, can PWD provide more detail on the existing transformer? And can PWD provide electrical drawings showing connected loads?

A:  document shared on 3/11/2025.

28. Regarding “Addition of full-scale dewatering system at NEWPCP”, can PWD provide additional information on what is required and context on any existing issues relating to this request? Where on the facility would this system be located?

A: Presently, NEWPCP digested sludge is sent via barge to the BRC (adjacent to the SWWPCP) for dewatering and drying. On-site dewatering at the NEWPCP would reduce or eliminate reliance on barging/BRC, thereby better protecting the NEWPCP if barges cannot be sent or received by Synagro.

29. Please share capital project list with phase and scale (pilot, etc.), along with which ones can or should be considered in proposals.

A: Relevant projects include, but not limited to, the following; all are full-scale, except where noted:

- ▶ Addition of Digester Mixing System - Phase 1 (pilot)
- ▶ Addition of Digester Mixing System - Phase 2 (full scale)
- ▶ HVAC and Glycol System Betterment at the Sludge Gas Facilities
- ▶ Aeration System (Mechanical) Replacement - HVAC
- ▶ NEWPCP Primary and Final Treatment Infrastructure Betterment
- ▶ Sludge Screening Facility Betterment
- ▶ Digester Piping Replacement
- ▶ Betterment of Switchgear for Digesters
- ▶ Digester Gas Bladder Replacement
- ▶ Aeration System (Electrical / Instrumentation) Replacement
- ▶ Aeration System (Mechanical) Replacement
- ▶ Polymer Dosing System Betterment
- ▶ PTB, PST, and Digester Control Station Betterment.

30. Can PWD share projects that are increasing hydraulic capacity?

A: At the NEWPCP, relatively recently completed Gravity Sludge Thickeners have eliminated the need for thickening of primary sludge in primary sedimentation tanks, thereby decreasing the sensitivity of that part of the process to wet weather events. Additionally, a second Preliminary Treatment Building is currently under construction, and is a major component of the plant's ability to reach its committed-to future peak capacity of 650 MGD.


31. Please provide the costs of temporary dewatering, hauling, and sludge disposal.

A: PWD declines to provide this information before proposal selection.

32. Can PWD provide details on any recent major repairs and/or renovations?

A: PWD declines to provide this information before proposal selection.

33. Can PWD provide the flow rate and total solids out of the digesters?

A:  document shared on 3/11/2025.

SWWPCP

1. Is PWD looking to replace the cryogenic oxygen system at the SWWPCP, or does it plan to continue operations and maintenance of the equipment?

A: PWD is considering the replacement and/or removal of any cryogenic, high purity oxygen systems from the SWWPCP facility due to age, maintenance requirements, and regulations associated with the process and system.

2. Can you describe the size and operating pressure of the PGW natural gas pipelines that supply or are near to the SWWPCP?

A: PGW does not operate any pipelines on the SWWPCP facility. PGW does operate two pipelines in the general vicinity of the SWWPCP (one immediately North of the facility on South Road and one ¼ mile Southwest of the facility on Enterprise Avenue), as described below

Pipeline	Parameter	Value
1 (North of SWWPCP)	MAOP	60 PSIG
	Diameter	6"

Pipeline	Parameter	Value
2 (Southwest of SWWPCP)	Material	Steel
	MAOP	60 PSIG
	Diameter	6"
	Material	Steel

3. When does the current Synagro maintenance contract expire?

A: 2028.

4. Can details be shared on PWD’s current tariff agreement?

A: See attached excel file which includes energy use data for CY2022, CY2023, and CY2024. Natural gas is billed per the PGW tariff.

5. What is the number of people working at the SWWPCP and what is the average turnover rate?

A: 101 employees work at this facility – approximately 60 are Maintenance. PWD doesn’t have turnover rates at this time for the facility. However, in general, PWD indicates that generational turnover and replacement hiring, related to an influx of staffing from the Clean Water Act, is occurring now.

6. Have there been any permit violations in the past?

A: SWWPCP has experienced permit violations in the past. In general, information on violations should be publicly available. Relevant to this RFP, there was a backup fuel permit (tied to the SWWPCP Synthetic Minor Operating Permit) that was exceeded last year due to a drop in biogas production.

7. What land is available for additional development at this site?

A: Please refer to the publicly available Q&A document from the RFI: https://philaenergy.org/wp-content/uploads/2023/02/RNG-RFI-Questions_and_Responses_20230221.pdf.

8. What, if any, processing is being done on the biogas at SWWPCP?

A: The only processing being done on the gas is the use of condensate traps at the digesters and along the pipeline to Synagro. There are no H₂S, Siloxane, or other treatment processes performed on the gas.

9. Where are digesters fed at the SWWPCP?

A: The Sludge Thickening Building; refer to the process flow diagram in Attachment B-5.

10. What is the range of power consumption?

A: Please see below. Note, we anticipate a future demand jump when a significant number of EV chargers are installed over the next 5-10 years.

	CY2023	CY2024
Minimum	8,333 kW	7,488 kW
Maximum	11,098 kW	9,907 kW
Average	9,277 kW	8,647 kW

11. Can PWD provide additional details on the hookup for airport deicing fluid?

A: There is a connection to directly receive airport deicing fluid that is trucked into the plant and connected to the Sludge Thickening Building via a hose. The amount brought in ranges from 6,000

– 30,000 gallons/day, depending on weather conditions. This volume is usually supplied between the months of November through March.

12. What process at SWWPCP draws the highest energy usage?

A: For electricity use, the cryogenic oxygen facility uses the most energy on the plant. The second highest electricity use would be the aeration process. For gas, Synagro’s fertilizer production facility has the highest usage. Note that there is no direct PGW connections with the SWWPCP, but that there is a connection at the adjacent Synagro facility that uses large volumes of gas to support the fertilizer production.

13. What is the value of the credits currently being made through the monetization of the Biogas credits?

A: We do not currently monetize credits for the biogas at the SWWPCP.

14. What is the volume of sludge in the digesters?

A: 1.2 million gallons per digester.

15. Does the SWWPCP receive sewage sludge from septic tanks?

A: No.

16. When was the last time any of the digesters were cleaned?

*Table 2: SWWPCP Digester and Sludge Transfer Tank Cleaning Summary**

Digester/Tank	#	Date of Last Cleaning Completion
Digester	5	September 2016
Digester	6	February 2024
Digester	7	May 2021
Digester	8	December 2023
Digester	9	January 2022
Digester	10	September 2021
Digester	11	March 2025
Digester	12	September 2023
Digester	13	March 2023
Digester	14	November 2024
Digester	15	September 2018
Digester	16	January 2020

**Note that SWWPCP has twelve digesters that are numbered starting at No. 5.*

17. Please provide the operating temperature of the digesters.

A: Ideal operating range is 95 – 100 °F; current actual operating range is 65 – 100 °F (this actual operating range varies seasonally while the SWWPCP addresses digester heating issues).

18. Can PWD provide a breakout of natural gas that serves the support buildings at the SWWPCP, similar to what was provided for the NEWPCP?

A: No, natural gas is used to serve support buildings at the SWWPCP, only biogas.

19. Can PWD provide size/square footage of buildings?

SWWPCP		
Process Area/Building	Sub-Building Name	Roof Area (SF)
Compressor Building		14,000
Aeration Tanks	Access Buildings	2,000
	Gallery	NA
	Total	2,000
Final Sedimentation Tanks	Access Buildings	4,000
	Gallery	NA
	Total	4,000
Effluent Pumping Station		8,000
Administration Building (minus sculpture court)		13,000
Shop & Maintenance Building		17,000
Warehouse		8,000
Electrical Building		4,000
Preliminary Treatment Building		51,000
Influent Pumping Station		5,000
Scum Concentration Building		2,000
Sludge Thickener Building		69,000
Sludge Digestion Tanks 9-16		114,000
Sludge Digestion Tanks 5-8		59,000
Sludge Gas Facilities	Gas Compressor Building	6,000
	Waste Gas Burner Building	1,000
	Gas Storage Tank	6,000
	Total	13,000
Fleet Management Building		5,000
Shop and Maintenance Building 2		4,000
Warehouse 2		3,000
Grease Burner Building		2,500
Sodium Hypochlorite Building		6,000
BRC Admin Building		9,000

20. What are the H2S content in the biogas for this facility?

A: Sampling data of the SWWPCP biogas conducted by PGW indicates a Hydrogen Sulfide concentration of 3.51ppm.

21. If there is a digester upset, what are the consequences, in terms of biogas?

A: If biogas production is impacted due to digester upset, operation of plant processes fed by biogas (boilers, blowers) would need to be scaled back. Biogas is also supplied to Synagro and used to operate dryers at BRC, but they have a natural gas hookup to supplement SWWPCP biogas.

22. Please provide information on the quantity of biogas from the SWWPCP. What is the maximum output of biogas?

A: Based on FY2019 through FY2024 data, biogas output has ranged from 224,000 MCF – 438,000 MCF.

23. What kind of roofs do the anaerobic digesters have?

A: Flat, concrete.

24. What are the dimensions of each of the anaerobic digesters?

A: Refer to NEWPCP, Question/Answer #19.

25. Can PWD provide pictures of an out-of-service digester to indicate the inner configuration of the digester?

A: PWD does not have an image for SWWPCP; rather, please refer to the image of NEWPCP Digester No. 9 below for the inner configuration of the digester (they are very similar).



Figure 1: Inside of NEWPCP Digester No. 9

26. Please share capital project list with phase and scale (pilot, etc.), along with which ones can or should be considered in proposals.

A: Relevant projects are included below; all are full-scale:

- ▶ Addition of Two Aeration Tanks
- ▶ Addition of Two Final Sedimentation Tanks
- ▶ Primary Sedimentation Tank Addition
- ▶ Southwest Glycol System Betterment
- ▶ Replacement of Southwest Sludge Feed System
- ▶ Final Sedimentation Tank Return Sludge Betterment
- ▶ Replacement of PST Sludge Pumps and Influent Gates
- ▶ Replacement of High Pressure Digester Gas Lines

-
- ▶ Mixers at Aeration Tanks Replacement.

27. Can PWD share projects that are increasing hydraulic capacity?

A: At the SWWPCP, the preliminary (i.e., grit removal) and primary (i.e., primary sedimentation) treatment processes were identified as hydraulic bottlenecks. Therefore, a project to add a sixth primary sedimentation tank is underway. Additionally, there is an ongoing alternatives analysis to explore potential new configurations for grit removal and handling, and hydraulic capacity expansion of this process is being considered.

28. Regarding “New Biogas Utilization Valve”, can PWD provide details on existing valves and piping currently in place (size, photos)?

A: More details will not be provided before proposal selection.

29. Regarding “Upgrades to Preliminary Treatment Building, Sludge Thickener Building, and Digesters”, can PWD specify upgrades needed at the Preliminary Treatment and Sludge Thickener Buildings?

A: More details will not be provided before proposal selection.

30. Regarding “Energy efficient blowers, mixers on aerations tanks, and dryer”, can PWD provide more details on the existing blowers, mixers, and dryers for the aeration tanks (motor sizes, capacity [CFM])?

A: More details will not be provided before proposal selection.

31. Regarding “Improvements to Grit Removal Process”, can PWD provide more details on the current process for grit removal and the problems associated with the current process?

A: At SWWPCP, grit is removed from the process via four detritor tanks. Grit settles out at the bottom of each tank and is collected by rake arms on the bottom of each tank. The collected grit is pumped up to the top of the Preliminary Treatment Building (up four stories), dewatered, and then dropped into a truck for disposal. The plant has identified two separate issues with the existing process: 1) grit removal is not functioning as designed – a lot of grit makes it through this stage of the process and settles out in downstream flocculation tanks and digesters and 2) grit handling is inefficient – pumping grit up four stories to drop it back down into a truck = unnecessary pumping requirements.

32. Regarding “Improvements to removal of trash and large debris from sludge (sludge screens)”, can PWD explain why large debris is able to pass through the existing bar screens?

A: More details will not be provided before proposal selection.

33. Regarding “Addition of sludge density metering”, can PWD indicate where in the process this metering would be installed (size, photos)?

A: More details will not be provided before proposal selection.

34. Regarding “Replacement of three-way valves for modulating the glycol heating loop in the anaerobic digesters”, can PWD provide more detail on the existing three-way valves used to modulate the glycol heating loop (size, photos)?

A: More details will not be provided before proposal selection.

35. Regarding “Replacement of digester inlet valves for correct digester feeding”, can PWD provide more detail on the existing digester inlet valves (size, photos)? Are these valves tied into the SCADA system?

A: More details will not be provided before proposal selection.

36. Regarding “Addition of sludge flow meters to digesters”, can PWD provide more detail on where in the process these would be installed (size, photos)?

A: More details will not be provided before proposal selection.

37. Regarding “Installation of strainers on heating loops (primary and secondary)”, can PWD provide pipe sizes for the primary and secondary loops?

A: More details will not be provided before proposal selection.

38. Can PWD please provide historical records of biogas flowrates at SWWPCP? Understanding there has been an upset, please provide 60 months of data or two years of steady-state data prior to and leading up to the plant upset.

A: More details will not be provided before proposal selection.

39. Can PWD please provide any previous studies about the ability to provide natural gas services at the SWWPCP? Alternatively, please provide any known information about the nearest natural gas service location. Please include any estimates of natural gas service capacity required.

A: Please refer to Question #10 in the **SWWPCP** section. More details will not be provided before proposal selection.

40. Can PWD provide details on any recent major repairs and/or renovations?

A: More details will not be provided before proposal selection.