

**Exhibit A
WORK STATEMENT**

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TECHNICAL TASK LIST

Task #	CPR	Task Name
1	N/A	ADMINISTRATION
2		CULTURE THE SELECTED BACTERIA
3		BUILD A 5-COMPARTMENT STRAIN INCUBATOR
4		BUILD A 100-GALLON CASCADE METHANE BIOREACTOR (CMB)
5	X	BUILD A 1000-GALLON DIGESTER
6		CONNECT THE 1000-GALLON DIGESTER TO THE EXISTING DSRSD FUEL CELL
7	X	MEASUREMENT OF GAS FLOW RATE AND VERIFICATION BY DSRSD
8		TUNE THE PROCESS
9		TECHNOLOGY TRANSFER ACTIVITIES
10	X	PRODUCTION READINESS PLAN

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KEY NAME LIST

Task #	Key Personnel in CCE	Key Subcontractor(s)	Key Partner(s)
1	Charles Zhou		
2			
3			
4	Charles Zhou		
5	Charles Zhou		Dublin San Ramon Service District (DSRSD)
6-7	Charles Zhou		DSRSD
8			DSRSD
9-10	Charles Zhou		DSRSD

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GLOSSARY

Specific terms and acronyms used throughout this scope of work are defined as follows:

Term/ Acronym	Definition
ATCC	American Type Culture Collection
BAC	Signifies a particular bacterial strain (see Figure 1)
BOD	Biological Oxygen Demand
CASCADE	Computer-Assisted Strain Construction and Development Engineering
CCES	CASCADE Clean Energy System
CMB	CASCADE Methane Bioreactor
COD	Chemical Oxygen Demand

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Term/ Acronym	Definition
CPR	Critical Project Review
DSRSD	Dublin San Ramon Service District
M&V	Measurement and Verification
PIER	Public Interest Energy Research
RD&D	Research, Development and Demonstration

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Problem Statement:

Wastewater treatment uses 5-7% of electrical output in the United States. However, currently only 1-2% of treatment facilities in the United States recover energy from wastewater. California fares slightly better; as of 2008, 10 of its 242 wastewater treatment plants (about 4%) generated electrical power. These facilities use naturally-occurring microbial strains in an anaerobic digestion process to recover methane from wastewater and sludge. Methane is then consumed in reciprocating engines, gas turbines, fuel cells or other systems to produce electricity.

Among the wastewater treatment plants that recover energy from wastewater and sludge, major efforts have not been undertaken to actively select microorganisms to maximize energy recovery. As wastewater treatment plants consume a substantial amount of electricity, the idea of amplifying energy recovery by selecting the optimal microbial strains has enormous potential.

The Recipient's patented Computer-Assisted Strain Construction and Development Engineering (CASCADE) technology discovers the predictive relations between an organism's genomic fingerprint and its metabolic capabilities. The technology uses these relations to find the best organisms for particular applications. Members of this project's team have had successful results in previous experiments using selected microbial strains and laboratory-produced wastewater and sludge. Enhancing wastewater energy recovery in the form of methane, hydrogen or electricity using specially-selected bacteria was shown to be feasible. Now, this CASCADE Clean Energy System (CCES) pilot project is designed to demonstrate the results of cleaning and recovering energy from municipal wastewater more efficiently than existing processes. The project aims to show that maximizing the recovery of renewable energy from wastewater and sludge is scalable to a commercially acceptable level.

The key measures for evaluating the success of the CCES are: 1) improving methane production, 2) Biological Oxygen Demand (BOD) reduction, 3) Chemical Oxygen Demand (COD) reduction and 4) reduced hydraulic retention time.

Goals of the Agreement:

The goal of this project is to build a 1000-gallon demonstration prototype of the CASCADE Clean Energy System that is integrated into the existing wastewater treatment process at the Dublin San Ramon Service District (DSRSD) in order to

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1 demonstrate that the CCES can improve DSRSD's existing waste-to-energy conversion.
2 This project involves building the skid-mounted 1000-gallon anaerobic digester coupled
3 to a 100-gallon CASCADE Methane Bioreactor (CMB), sourcing the sludge from
4 DSRSD, and piping methane to either a safety flare or to DSRSD's existing fuel cell
5 during tests. The project also aims to improve COD, BOD, and hydraulic retention
6 characteristics of the wastewater stream and show that the CCES is scalable to a
7 commercially acceptable level.
8

9 **Objectives of the Agreement:**

- 10 • Improve methane production from wastewater and sludge by 30% or more
- 11 • Reduce the Biological Oxygen Demand (BOD) of the treated wastewater stream
- 12 • Reduce the Chemical Oxygen Demand (COD) of the treated wastewater stream
- 13 • Reduce the hydraulic retention time of the pilot wastewater treatment system
14 compared to the current system

15 **Product Guidelines:**

16 For complete product guidelines, refer to Section 5 in the Terms and Conditions.
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20 **TASK 1 ADMINISTRATION**

21 **Task 1.1 Attend Kick-off Meeting**

22 The goal of this task is to establish the lines of communication and procedures for
23 implementing this Agreement.
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27 **The Recipient shall:**

- 28 • Attend a "Kick-Off" meeting with the Commission Project Manager, the
29 Grants Officer, and a representative of the Accounting Office. The
30 Recipient shall bring its Project Manager, Agreement Administrator,
31 Accounting Officer, and others designated by the Commission Project
32 Manager to this meeting. The administrative and technical aspects of this
33 Agreement will be discussed at the meeting. Prior to the kick-off meeting,
34 the Commission Project Manager will provide an agenda to all potential
35 meeting participants.
36

37 The administrative portion of the meeting shall include, but not be limited
38 to, the following:

- 39 ○ Discussion of the terms and conditions of the Agreement
- 40 ○ Discussion of Critical Project Review (Task 1.2)
- 41 ○ Match fund documentation (Task 1.6)
- 42 ○ Permit documentation (Task 1.7)
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1 The technical portion of the meeting shall include, but not be limited to, the
2 following:

- 3 ○ The Commission Project Manager's expectations for accomplishing
- 4 tasks described in the Scope of Work
- 5 ○ An updated Schedule of Products
- 6 ○ Discussion of Progress Reports (Task 1.4)
- 7 ○ Discussion of Technical Products (Product Guidelines located in
- 8 Section 5 of the Terms and Conditions)
- 9 ○ Discussion of the Final Report (Task 1.5)

10
11 **The Commission Project Manager shall:**

- 12 • Designate the date and location of this meeting.

13
14 **Recipient Products:**

- 15 • Updated Schedule of Products (no draft)
- 16 • Updated List of Match Funds (no draft)
- 17 • Updated List of Permits (no draft)

18
19 **Commission Project Manager Product:**

- 20 • Kick-Off Meeting Agenda (no draft)

21
22 **Task 1.2 Critical Project Review (CPR) Meetings**

23
24 The goal of this task is to determine if the project should continue to receive Energy
25 Commission funding to complete this Agreement and to identify any needed
26 modifications to the tasks, products, schedule or budget.

27
28 CPRs provide the opportunity for frank discussions between the Energy Commission
29 and the Recipient. CPRs generally take place at key, predetermined points in the
30 Agreement, as determined by the Commission Project Manager and as shown in the
31 Technical Task List above. However, the Commission Project Manager may schedule
32 additional CPRs as necessary, and any additional costs will be borne by the Recipient.

33
34 Participants include the Commission Project Manager and the Recipient and may
35 include the Commission Grants Officer, the Public Interest Energy Research (PIER)
36 Program Team Lead, other Energy Commission staff and Management as well as other
37 individuals selected by the Commission Project Manager to provide support to the
38 Energy Commission.

39
40 **The Commission Project Manager shall:**

- 41 • Determine the location, date, and time of each CPR meeting with the
- 42 Recipient. These meetings generally take place at the Energy
- 43 Commission, but they may take place at another location.
- 44 • Send the Recipient the agenda and a list of expected participants in

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1 advance of each CPR. If applicable, the agenda shall include a
2 discussion on both match funding and permits.

- 3 • Conduct and make a record of each CPR meeting. One of the outcomes
4 of this meeting will be a schedule for providing the written determination
5 described below.
- 6 • Determine whether to continue the project, and if continuing, whether or
7 not modifications are needed to the tasks, schedule, products, and/or
8 budget for the remainder of the Agreement. Modifications to the
9 Agreement may require a formal amendment (please see the Terms and
10 Conditions). If the Commission Project Manager concludes that
11 satisfactory progress is not being made, this conclusion will be referred to
12 the Energy Commission's Research, Development and Demonstration
13 (RD&D) Policy Committee for its concurrence.
- 14 • Provide the Recipient with a written determination in accordance with the
15 schedule. The written response may include a requirement for the
16 Recipient to revise one or more product(s) that were included in the CPR.

17
18 **The Recipient shall:**

- 19 • Prepare a CPR Report for each CPR that discusses the progress of the
20 Agreement toward achieving its goals and objectives. This report shall
21 include recommendations and conclusions regarding continued work of
22 the projects. This report shall be submitted along with any other products
23 identified in this scope of work. The Recipient shall submit these
24 documents to the Commission Project Manager and any other designated
25 reviewers at least 15 working days in advance of each CPR meeting.
- 26 • Present the required information at each CPR meeting and participate in a
27 discussion about the Agreement.

28
29 **Commission Project Manager Products:**

- 30 • Agenda and a list of expected participants (no draft)
- 31 • Schedule for written determination (no draft)
- 32 • Written determination (no draft)

33
34 **Recipient Product:**

- 35 • CPR Report(s) (no draft)

36
37 **Task 1.3 Final Meeting**

38
39 The goal of this task is to close out this Agreement.

40
41 **The Recipient shall:**

- 42 • Meet with Energy Commission staff to present the findings, conclusions,
43 and recommendations. The final meeting must be completed during the

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1 closeout of this Agreement.
2

3 This meeting will be attended by, at a minimum, the Recipient, the
4 Commission Grants Office Officer, and the Commission Project Manager.
5 The technical and administrative aspects of Agreement closeout will be
6 discussed at the meeting, which may be two separate meetings at the
7 discretion of the Commission Project Manager.
8

9 The technical portion of the meeting shall present an assessment of the
10 degree to which project and task goals and objectives were achieved,
11 findings, conclusions, recommended next steps (if any) for the Agreement,
12 and recommendations for improvements. The Commission Project
13 Manager will determine the appropriate meeting participants.
14

15 The administrative portion of the meeting shall be a discussion with the
16 Commission Project Manager and the Grants Officer about the following
17 Agreement closeout items:

- 18 ○ What to do with any equipment purchased with Energy Commission
19 funds (Options)
- 20 ○ Energy Commission's request for specific "generated" data (not
21 already provided in Agreement products)
- 22 ○ Need to document Recipient's disclosure of "subject inventions"
23 developed under the Agreement
- 24 ○ "Surviving" Agreement provisions, such as repayment provisions
25 and confidential Products
- 26 ○ Final invoicing and release of retention
- 27 ○ Prepare a schedule for completing the closeout activities for this
28 Agreement
29

30 **Products:**

- 31 • Written documentation of meeting agreements (no draft)
- 32 • Schedule for completing closeout activities (no draft)
- 33

34 **Task 1.4 Monthly Progress Reports**

35
36 The goal of this task is to periodically verify that satisfactory and continued progress is
37 made towards achieving the research objectives of this Agreement on time and within
38 budget.
39

40 The objectives of this task are to summarize activities performed during the reporting
41 period, to identify activities planned for the next reporting period, to identify issues that
42 may affect performance and expenditures, and to form the basis for determining
43 whether invoices are consistent with work performed.
44

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1 **The Recipient shall:**

- 2 • Prepare a Monthly Progress Report which summarizes all Agreement
3 activities conducted by the Recipient for the reporting period, including an
4 assessment of the ability to complete the Agreement within the current
5 budget and any anticipated cost overruns. Each progress report is due to
6 the Commission Project Manager within 10 days of the end of the
7 reporting period. The recommended specifications for each progress
8 report are contained in Exhibit A, Attachment A-2.
- 9 • Include photos documenting the progress of the Technical Tasks in the
10 applicable Monthly Progress Reports.

11
12 **Product:**

- 13 • Monthly Progress Reports (no draft)
- 14 • Photos

15
16 **Task 1.5 Final Report**

17
18 The goal of the Final Report is to assess the project's success in achieving its goals and
19 objectives, advancing science and technology, and providing energy-related and other
20 benefits to California.

21
22 The objectives of the Final Report are to clearly and completely describe the project's
23 purpose, approach, activities performed, results, and advancements in science and
24 technology; to present a public assessment of the success of the project as measured
25 by the degree to which goals and objectives were achieved; to make insightful
26 observations based on results obtained; to draw conclusions; and to make
27 recommendations for further RD&D projects and improvements to the PIER project
28 management processes.

29
30 The Final Report shall be a public document. If the Recipient has obtained confidential
31 status from the Energy Commission and will be preparing a confidential version of the
32 Final Report as well, the Recipient shall perform the following activities for both the
33 public and confidential versions of the Final Report.

34
35 **The Recipient shall:**

- 36 • Prepare an Outline of the Final Report.
- 37 • Prepare a Final Report following the approved outline and the latest
38 version of the PIER Final Report guidelines published on the Energy
39 Commission's website
40 at <http://www.energy.ca.gov/contracts/pier/contractors/index.html> at
41 the time the Recipient begins performing this task, unless otherwise
42 instructed in writing by the Commission Project Manager. Instead of the
43 timeframe listed in the Product Guidelines located in Section 5 of the
44 Terms and Conditions, the Commission Project Manager shall provide

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1 written comments on the Draft Final Report within fifteen (15) working
2 days of receipt. The Final Report must be completed on or before the end
3 of the Agreement Term.

- 4 • Submit one bound copy of the Final Report with the final invoice.

6 **Products:**

- 7 • Draft Outline of the Final Report
- 8 • Final Outline of the Final Report
- 9 • Draft Final Report
- 10 • Final Report

12 **Task 1.6 Identify and Obtain Matching Funds**

14 The goal of this task is to ensure that the match funds planned for this Agreement are
15 obtained for and applied to this Agreement during the term of this Agreement.

17 The costs to obtain and document match fund commitments are not reimbursable
18 through this Agreement. Although the PIER budget for this task will be zero dollars, the
19 Recipient may utilize match funds for this task. Match funds shall be spent concurrently
20 or in advance of PIER funds for each task during the term of this Agreement. Match
21 funds must be identified in writing and the associated commitments obtained before the
22 Recipient can incur any costs for which the Recipient will request reimbursement.

24 **The Recipient shall:**

- 25 • Prepare a letter documenting the match funding committed to this
26 Agreement and submit it to the Commission Project Manager at least 2
27 working days prior to the kick-off meeting. If no match funds were part of
28 the proposal that led to the Energy Commission awarding this Agreement
29 and none have been identified at the time this Agreement starts, then
30 state such in the letter. If match funds were a part of the proposal that led
31 to the Energy Commission awarding this Agreement, then provide in the
32 letter a list of the match funds that identifies the:
 - 33 ○ Amount of each cash match fund, its source, including a
34 contact name, address and telephone number and the
35 task(s) to which the match funds will be applied
 - 36 ○ Amount of each in-kind contribution, a description,
37 documented market or book value, and its source, including
38 a contact name, address and telephone number and the
39 task(s) to which the match funds will be applied. If the in-
40 kind contribution is equipment or other tangible or real
41 property, the Recipient shall identify its owner and provide a
42 contact name, address and telephone number, and the
43 address where the property is located
- 44 • Provide a copy of the letter of commitment from an authorized

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1 representative of each source of cash match funding or in-kind
2 contributions that these funds or contributions have been secured.

- 3 • Discuss match funds and the implications to the Agreement if they are
4 reduced or not obtained as committed, at the kick-off meeting. If
5 applicable, match funds will be included as a line item in the progress
6 reports and will be a topic at CPR meetings.
- 7 • Provide the appropriate information to the Commission Project Manager if
8 during the course of the Agreement additional match funds are received.
- 9 • Notify the Commission Project Manager within 10 days if during the
10 course of the Agreement existing match funds are reduced. Reduction in
11 match funds must be approved through a formal amendment to the
12 Agreement and may trigger an additional CPR.

13 **Products:**

- 14 • A letter regarding match funds (no draft)
- 15 • Copy(ies) of each match fund commitment letter(s) (no draft)
- 16 • Letter(s) for new match funds (if applicable) (no draft)
- 17 • Letter that match funds were reduced (if applicable) (no draft)

18 **Task 1.7 Identify and Obtain Required Permits**

19
20
21 The goal of this task is to obtain all permits required for work completed under this
22 Agreement in advance of the date they are needed to keep the Agreement schedule on
23 track.

24
25 Permit costs and the expenses associated with obtaining permits are not reimbursable
26 under this Agreement. Although the PIER budget for this task will be zero dollars, the
27 Recipient shall budget match funds for any expected expenditures associated with
28 obtaining permits. Permits must be identified in writing and obtained before the
29 Recipient can make any expenditures for which a permit is required.

30 **The Recipient shall:**

- 31 • Prepare a letter documenting the permits required to conduct this
32 Agreement and submit it to the Commission Project Manager at least 2
33 working days prior to the kick-off meeting. If there are no permits required
34 at the start of this Agreement, then state such in the letter. If it is known at
35 the beginning of the Agreement that permits will be required during the
36 course of the Agreement, provide in the letter:
 - 37 ○ A list of the permits that identifies the:
 - 38 ▪ Type of permit
 - 39 ▪ Name, address and telephone number of the permitting
40 jurisdictions or lead agencies
- 41 • The schedule the Recipient will follow in applying for and obtaining these

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1 permits.

- 2 • Discuss the list of permits and the schedule for obtaining them at the kick-
3 off meeting and develop a timetable for submitting the updated list,
4 schedule and the copies of the permits. The implications to the
5 Agreement if the permits are not obtained in a timely fashion or are denied
6 will also be discussed. If applicable, permits will be included as a line item
7 in the Progress Reports and will be a topic at CPR meetings.
- 8 • If during the course of the Agreement additional permits become
9 necessary, provide the appropriate information on each permit and an
10 updated schedule to the Commission Project Manager.
- 11 • As permits are obtained, send a copy of each approved permit to the
12 Commission Project Manager.
- 13 • If during the course of the Agreement permits are not obtained on time or
14 are denied, notify the Commission Project Manager within 10 days. Either
15 of these events may trigger an additional CPR.

16 17 **Products:**

- 18 • Letter documenting the permits or stating that no permits are required (no
19 draft)
- 20 • A copy of each approved permit (if applicable) (no draft)
- 21
- 22 • Updated list of permits as they change during the term of the Agreement
23 (if applicable) (no draft)
- 24 • Updated schedule for acquiring permits as changes occur during the term
25 of the Agreement (if applicable) (no draft)

26 27 **TECHNICAL TASKS**

28 Figure 1 shows the design of the pilot demonstration unit and the flow of technical tasks.
29

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1 volume and rate of the culture flowing to the bioreactor. Each container needs a
2 metering pump to measure the flow rate of the bacterial culture.

3 **The Recipient shall:**

- 4 • Construct a 5-compartment strain incubator. Each compartment will
5 contain one gallon of bacteria culture.
- 6 • Construct each compartment to have a reciprocating valve to control the
7 volume and rate of the culture flowing to the bioreactor.
- 8 • Provide a Technical Memorandum documenting the procedures,
9 obstacles, and results of this Task.
- 10 • As per Task 1.4, take photos documenting the progress of this Task and
11 include them in Monthly Progress Reports.

12

13 **Products:**

- 14 • Draft Technical Memorandum
- 15 • Final Technical Memorandum

16

17 **TASK 4: BUILD A 100-GALLON CASCADE METHANE BIOREACTOR (CMB)**

18 The goal of this task is to build a 100-gallon CMB to mix the bacteria from the 5-
19 compartment incubator with DSRSD sludge.

20

21 **The Recipient shall:**

- 22 • Procure a 100-gallon container.
- 23 • Install a small pump to control the volume and rate of sludge to the
24 bioreactor.
- 25 • Install an automatic switch valve and a flow meter.
- 26 • Install a metering pump to measure the flow rate of the bacterial culture.
- 27 • Feed the CMB with the cultured bacteria from the 5-compartment
28 incubator.
- 29 • Feed the CMB with concentrated sludge from DSRSD.
- 30 • Provide a Technical Memorandum documenting the procedures,
31 obstacles, and results of this Task.
- 32 • As per Task 1.4, take photos documenting the progress of this Task and
33 include them in Monthly Progress Reports.

34

35 **Products:**

- 36 • Draft Technical Memorandum
- 37 • Final Technical Memorandum

38

39 **TASK 5: BUILD A 1000-GALLON DIGESTER**

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1 The goal of this task is to build a 1000-gallon digester to mimic the conditions of
2 DSRSD's 600,000-gallon unit. Our partner at DSRSD has indicated this is large enough
3 to provide meaningful data to facilitate commercialization.¹
4

5 **The Recipient shall:**

- 6 • Acquire a double-walled 1000-gallon unit.
- 7 • Mimic the conditions of the DSRSD 600,000-gallon unit in the 1000-gallon
8 container.
- 9 • Control the container temperature to 96F by circulating heated water
10 provided by DSRSD into the inner wall that surrounds the container.
- 11 • Install a mechanical mixer to stir constantly at a slow rate.
- 12 • Install a connection to Digester 2 at DSRSD.
- 13 • Acquire a gas collection mechanism, (i.e., a gas pipe) in the 1000-gallon
14 container and CMB.
- 15 • Install an automatic switch valve and a flow meter for the gas.
- 16 • Ensure that a mechanism (i.e., gas meter) for measurement and
17 verification (M&V) of gas production is functional.
- 18 • Install sludge-sampling valves.
- 19 • Provide effluent connection to DSRSD headworks.
- 20 • Provide a Technical Memorandum documenting the procedures,
21 obstacles, and results of this Task.
- 22 • Participate in CPR as per Task 1.2
- 23 • As per Task 1.4, take photos documenting the progress of this Task and
24 include them in Monthly Progress Reports.
25

26 **Products**

- 27 • Draft Technical Memorandum
- 28 • Final Technical Memorandum
29
30

31 **TASK 6: CONNECT THE 1000-GALLON DIGESTER TO THE EXISTING DSRSD** 32 **FUEL CELL**

33 The goal of this task is to connect the gas collection from 1000-gallon digester and the
34 100-gallon CMB to the existing DSRSD gas conditioning unit and fuel cell and provide
35 for safety flaring.
36

37 **The Recipient shall:**

- 38 • Install gas line from the meter to the DSRSD gas purification system (note:
39 the DSRSD gas purification system is directly connected to the fuel cell).
- 40 • Install safety valve for flaring gas.
- 41 • Provide a Technical Memorandum documenting the procedures,

¹ <http://www.ccleanenergy.com/DSRSD-Support.pdf>

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1 obstacles, and results of this Task.

- 2 • As per Task 1.4, take photos documenting the progress of this Task and
- 3 include them in Monthly Progress Reports.

4
5 **Products:**

- 6 • Draft Technical Memorandum
- 7 • Final Technical Memorandum

8
9
10 **TASK 7: MEASUREMENT OF GAS FLOW RATE AND VERIFICATION BY DSRSD**

11 The goal of this task is to measure the gas flow rate from the CMB and digester.

12
13 **The Recipient shall:**

- 14 • Measure the gas flow rate from the 1000-gallon digester and 100-gallon
- 15 CMB using the installed flow meters.
- 16 • Take gas samples from the 1000-gallon digester and 100-gallon CMB.
- 17 • Have the gas samples independently analyzed.
- 18 • Submit measurement to DSRSD for verification.
- 19 • Provide a Technical Memorandum documenting the procedures,
- 20 obstacles, and results of this Task.
- 21 • Participate in CPR as per Task 1.2
- 22 • As per Task 1.4, take photos documenting the progress of this Task and
- 23 include them in Monthly Progress Reports.

24
25 **Products:**

- 26 • Draft Technical Memorandum
- 27 • Final Technical Memorandum

28
29
30 **TASK 8: TUNE THE PROCESS**

31 The goal of this task is to tune the process to optimize the methane production within

32 the safety parameters prescribed by DSRSD.

33
34 **The Recipient shall:**

- 35 • Take sludge samples from the 1000-gallon digester using the sampling
- 36 valve.
- 37 • Submit the sludge samples for independent BOD and COD analysis.
- 38 • Analyze the gas analysis results to see how much methane production is
- 39 improved and track performance over time.
- 40 • Adjust the rate of the bacteria and sludge mixture going to the digester to
- 41 reach the goals of methane production improvement, BOD/COD and
- 42 retention time reduction.

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- 1 • Adjust the amount and kind of the initial bacteria to reach the methane
- 2 production improvement goal.
- 3 • Provide a Technical Memorandum documenting the procedures,
- 4 obstacles, and results of this Task.
- 5 • Provide a Memorandum documenting M&V confirmation from DSRSD
- 6 • As per Task 1.4, take photos documenting the progress of this Task and
- 7 include them in Monthly Progress Reports.
- 8

9 **Products:**

- 10 • Draft Technical Memorandum
- 11 • Final Technical Memorandum
- 12 • A Memorandum documenting M&V confirmation from DSRSD
- 13
- 14

15 **TASK 9: TECHNOLOGY TRANSFER ACTIVITIES**

16 The goal of this task is to develop a plan to make the knowledge gained, experimental
17 results and lessons learned available to key decision-makers.

18
19 **The Recipient shall:**

- 20
- 21 • Prepare a Technology Transfer Plan. The plan shall explain how the
- 22 knowledge gained in this project will be made available to the public.
- 23 • Conduct technology transfer activities in accordance with the Technology
- 24 Transfer Plan. These activities shall be reported in the Monthly Progress
- 25 Reports.
- 26

27 **Products:**

- 28 • Draft Technology Transfer Plan
- 29 • Final Technology Transfer Plan
- 30
- 31

32 **TASK 10: PRODUCTION READINESS PLAN**

33 The goal of the plan is to determine the steps that will lead to the commercialization of
34 the project's results.

35
36 **The Recipient shall:**

- 37
- 38 • Prepare a Production Readiness Plan. The plan shall include, as
- 39 appropriate, but not be limited to:
- 40 • Identification of critical production processes, equipment, facilities,
- 41 personnel resources, and support systems that will be needed to
- 42 produce a commercially viable product.

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- 1 • Internal manufacturing facilities, as well as supplier technologies,
2 capacity constraints imposed by the design under consideration,
3 identification of design critical elements and the use of hazardous
4 or non-recyclable materials. The product manufacturing effort may
5 include “proof of production processes.”
- 6 • A projected “should cost” for the product when in production.
- 7 • The expected investment threshold to launch the commercial
8 product.
- 9 • An implementation plan to ramp up to full production.
- 10 • Participate in CPR as per Task 1.2
- 11

12 **Products:**

- 13 • Draft Production Readiness Plan
- 14 • Final Production Readiness Plan