



CHP System Maintenance Agreement Options

Please select the desired Service coverage and include any optional services below:



SERVICE COVERAGE
(Select which service level coverage you need)



SERVICE OPTION(S):
(Indicate all option(s) and a new Proposal will be provided)

Signed this Select Day day of Select Month, Select Year.



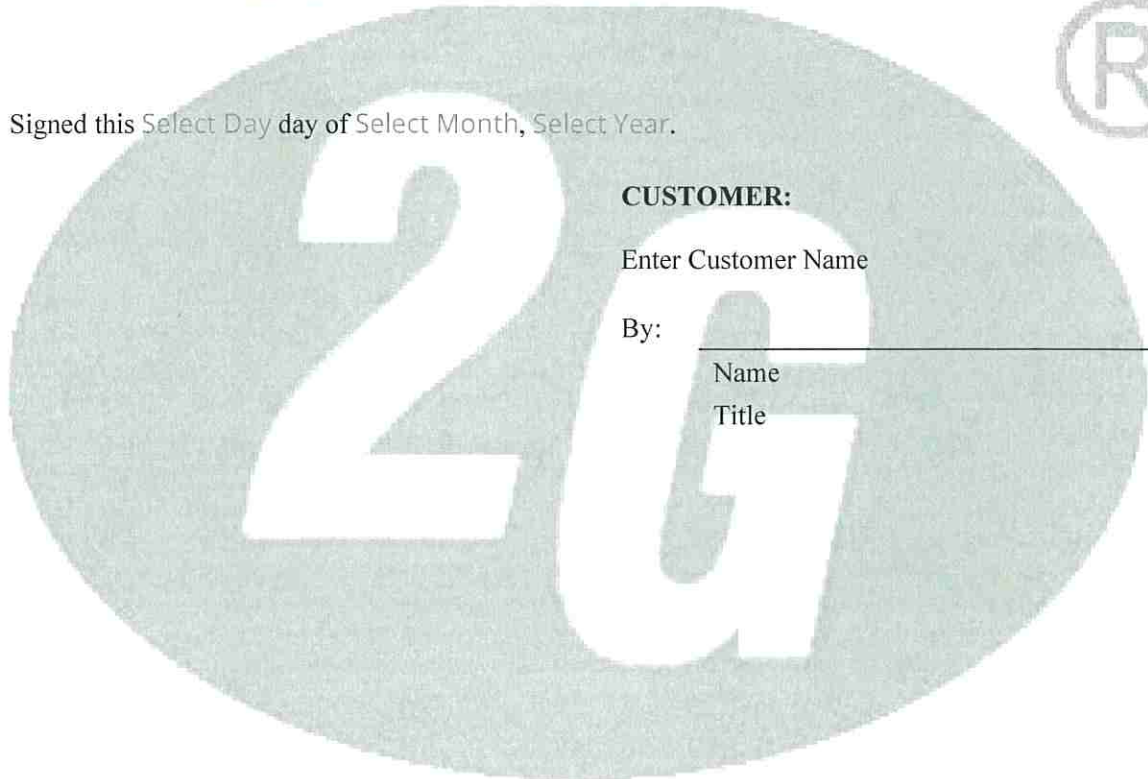
CUSTOMER:

Enter Customer Name

By: _____

Name


Title



Service Agreement Options



CHP System Maintenance Agreement Options



Description of Services	
Oil Analysis	✓
Travel and Labor included (during business hours)	✓
Materials for scheduled services	✓
Ground Shipping included	✓
Generator clutch/coupling replacement at OEM interval	✓
Spark plug supply- adjustments, if needed, by operator	✓
Grease generator bearings- If applicable	✓
Emissions tuning, as determined by service requirements	✓
Starter replacement as indicated by OEM schedule	✓
Module aggregate control electronics and sensors	✓
Delivered fuel system components	✓
Generator preventive maintenance	✓
Generator corrective maintenance	✓
Jacket Water Pump repairs*	✓
Emergency Cooler Pump repairs*	✓
Plate Heat Exchanger Inspections*	✓
Lube Oil Supply and changes	✓
Oil filter changes- at oil change	✓
Radiator fan/motor corrective maintenance	✓
Cabin fan/motor corrective maintenance	✓
Coolant changes- determined through analysis	✓
System Breakdown Coverage	✓
Travel and Labor included during work week	✓
Availability guarantee 92%	✓
Exhaust Gas Heat Exchanger repairs*	✗
Silencer repairs*	✗
Urea supply for SCR	✗
Customer heating pump or THDA repairs	✗
Gas leak detection system annual calibration	✗
Major Overhaul	✗
SCR Preventative	✗
SCR Corrective	✗
OxiCat Preventative	✗
OxiCat Corrective	✗
HRSB (Steam Generator) preventative	✗
HRSB (Steam Generator) corrective	✗
Cooling Tower Preventative	✗
Cooling Tower Corrective	✗
Absorption Chiller Preventative	✗
Absorption Chiller Corrective	✗





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Engine Innercooler(s) Preventive	X
Engine Innercooler(s) Corrective	X
Smoke detector replacement	X
HMI devices, after warranty period	X
All elastomer components, after warranty period	X
Batteries, after warranty period	X
Operation of CHP system by 2G staff	X
Availability guarantee, 95% if 2G operates the CHP	X

Engines Operating on Biogas or LFG				
Description of Services				
2G gas treatment system*			X	
Carbon Media supply (removal, install, disposal not			X	
Comments				
<p>*Component must comply with contamination levels; compliance in the event of a warranty claim is the responsibility of Customer. All OEM technical requirements must be observed.</p> <p>** Please ask you sales person for a quote for additional services if they are needed.</p>				

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Platinum - Premium Service Protection

This is the most comprehensive service package offered. This plan still requires an operator to perform normal plant duties. However, with this level of coverage, unforeseen costs are potentially eliminated. Get the most from your investment with Platinum coverage from 2G.

Customer Responsibility	 Responsibility
All system operator duties All other services except those indicated. M5 Minor and M7 Major overhaul Daily inspections and reporting Taking and sending oil samples Receiving deliveries Spare part inventory Rigging or special equipment needs All waste fluid and filter disposal Any official compliance testing, scheduling, or reporting requirements with environmental agencies Any emissions system corrective and preventive maintenance not included above Preventative and corrective maintenance on BOP items not included above	M1, M2, M4 per the highlighted section in Annex V - Labor, parts and travel to perform engine module preventive maintenance during regular business hours per the maintenance schedule set forth on Annex V attached to this Proposal Generator preventive and corrective maintenance Module aggregate control electronics and sensors Delivered fuel system components Corrective maintenance of all pumps, fans, VFD's, and electrical auxiliary components up to the customer connection point supplied by 2G Lube oil supply, oil filters, and changes Coolant changes at required intervals 92% availability and guaranteed response times for issues which cannot be resolved remotely with the assistance of your onsite operator***
Pricing	
Cost per Operating Hour:	US \$10.45 per operating hour/per unit
Availability Guarantee of 92%	8,060

***Subject to the conditions set forth on Annex IV attached to this Proposal



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Additional Exclusions, Limitations and Conditions

Exclusions and Limitations:

- **Oil Analysis:** Lube oil analysis costs are included. Customer shall be responsible for collecting samples of lube oil unless 2G is already performing the Services on Customer's site (in which case 2G shall collect such samples). 2G will supply Customer with ten (10) sample kits upon the acceptance of this Proposal. Customer must take the sample as required by lube oil sampling protocol, which must be shipped within twenty-four (24) hours to 2G's laboratory. Once the sample is received and analyzed, 2G will make a recommendation on when the lube oil change must occur. Customer shall be responsible for notifying 2G when it has three (3) sample kits remaining such that 2G can provide Customer with additional sample kits.
- **Lube Oil:** Lube oil changes will not necessarily fall during a scheduled service. Lube oil change intervals are determined by lube oil analysis results and recommendations by 2G. The platinum service option includes all lubricating oil costs as well as the labor for oil changes **ONLY** if Customer purchases 2G's lube oil change system (optional).
- **Customer Responsibilities:** Customer shall be responsible for the operation of the CHP System. Unless otherwise specified in this Proposal, 2G shall not be responsible for the operation of the CHP System. The operator of the CHP System shall be the primary point of contact for problems or shutdowns of the CHP System. Routine tasks such as inspections must be logged as indicated by OEM requirements. Routine cleaning of the module and all ventilation filters must be performed on an as needed basis. Customer must regularly communicate with 2G regarding the CHP System. Customer must respond to all shutdowns and conduct all initial investigations of faults and alarms, which must be timely reported to 2G. Unplanned outages which are not caused by the CHP System should be reported to 2G or the local distributor on the day of the occurrence via email. Thorough and proper operations will insure maximum availability and return on investment with respect to the CHP System. Customer shall be responsible for all work involving the heating loop including without limitation the initial fill, pumps and replacement fluids. Customer shall be responsible for compliance with fuel quality specifications and air quality and ventilation specifications. Any damage to the CHP System related to failure by the Customer to comply with such specifications will not be covered by the warranty provided by 2G.



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Proposal Conditions:

- Pricing is in USD as specified above and does not include applicable taxes.
- Pricing assumes easy site accessibility and engine installed on ground floor.
- Gas quality must meet the requirements of the engine manufacturer.
- Pricing will be adjusted annually according to a price variation clause in the LTSA to reflect changes in exchange rate as well as parts price.
- Customer must dispose of fluids and waste generated per local laws and regulations.
- Customer will receive, secure, and properly store all deliveries such as oil, glycol, and service materials.
- Customer will carry out, and record the operation, inspection and maintenance works performed as required by OEM.
- Customer will perform spark-plug maintenance (removal, cleaning, gapping, exchanging, and correct installation) between scheduled maintenance intervals.
- Customer will permit 2G to carry out the maintenance and repair works during the normal working time from 7.00 a.m. to 7.00 p.m. from Monday to Saturday.
- Customer agrees to strictly meet the requirements for engine lubrication oil, oil changes, parameters for OEM gas engines, cooling water quality, anti-freezing compounds, anti-corrosion compounds, and fuel gas quality according to the technical instructions.
- Customer shall accept online monitoring that allows 2G to take off-site readings of the status of the OPH and certain performance relevant measurements. 2G may readings for accounting purposes or ask for written records of the performed operating hours.
- 2G shall not be responsible for any unplanned corrective action required due to negligence or the incorrect operation or failure to comply with the user and OEM maintenance manuals, technical instructions, OEM gas requirements, or work instructions by Customer or any third party.
- All fluids are excluded from corrective maintenance services.
- It is recommended the Customer maintains machinery break down insurance to cover unforeseen events.



CHP System Maintenance Agreement Options

Annex IV – Availability Guarantee

For Platinum level Services, 2G guarantees that the CHP System shall be available to perform a minimum percentage of availability of 92% (or 8,060 operating hours) annually, in accordance with this Proposal and the applicable equipment spec sheet. If the availability exceeds the agreed percentage of availability, such additional hours will be carried forward to the following calendar year. This availability guarantee takes effect 60 days after 2G commences the Services.

If the CHP System fails to achieve the minimum annual operating hours, 2G shall compensate Customer as follows:

- 2G shall pay to Customer 1% of the value of the annual price paid by Customer under this Proposal and the LTSA for every full 1% below 8,060 which is not achieved (as determined in the below formula), but not to exceed 5% of the annual price paid by Customer under this Proposal and the LTSA.
- The percentage by which the CHP System's availability does not meet the minimum percentage is calculated as follows: total actual run hours / maximum available run hours
 - Total actual run hours are based on the CHP System's runtime meters
 - Maximum available run hours equals all hours in the year less time the CHP System is offline at Customer's or 2G's request, or due to any scheduled maintenance exclusions
 - This calculation shall be undertaken on an annual basis within 30 days after the start of the next calendar year.
- Any payments due by 2G to Customer hereunder shall be deducted from the next applicable invoice or paid via check to Customer. Such deductions or payments shall be made within 60 days of the start of the next calendar year.

The availability guarantee set forth above is contingent upon following conditions:

- Customer performs all required service and maintenance to the CHP System, including minor and major service inspections as set forth in manufacturer guidelines, and all required service and maintenance is performed exclusively by competent operators and personnel that have been trained and authorized by the engine manufacturer or 2G.
- The start/operating hours ratio for the CHP System is better than 1:5 (as per 2G TA-008).
- This Proposal and any LTSA between Customer and 2G remain in effect.
- Customer exclusively uses genuine OEM spare parts and consumables (including without limitation filters and spark plugs) at all times.
- Customer exclusively uses OEM and 2G approved fluids at all times.
- Customer follows 2G's recommended preventive maintenance programs and suggestions, including without limitation regular oil analysis reporting and following technical service bulletins.



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- The CHP System is exclusively operated in accordance with manufacturer guidelines and recommendations.
- Customer installs a high-speed internet and dedicated static IP address connection in accordance with 2G specifications for the life of this Proposal and the LTSA.
- The Customer accepts on-line remote monitoring that allows 2G to provide remote technical support and diagnose, troubleshoot, monitor performance or obtain operational data relating to the CHP System.
- Customer observes the minimum gas quality in accordance with OEM manufacturer guidelines and this Proposal at all times, and the gas quality and gas filter system is continuously monitored and properly maintained by Customer.
- Customer maintains optimal gas conditions (flow, pressure, and heat values / CH₄ content) in accordance with OEM manufacturer guidelines and this Proposal at all times. *2G recognizes that current customer design has flow, volume and storage limitations with current production and equipment limits. Due to these limitations, gas issues will not count against 2G responsibilities on availability.
- Customer maintains detailed and proper operational documentation at all times, which is made available or is freely by 2G or the OEM manufacturer.
- Customer operates the CHP System a minimum of 6000 oh annually.
- Customer purchases and maintains on hand at the CHP System's location the 2G recommended spare parts list.
- Customer pays all amounts when due under this Proposal and the LTSA.



CHP System Maintenance Agreement Options

Annex V - Maintenance Schedule

Maintenance Schedule and Requirements for filius, patruus, agenitor, avus 500

Turbocharged engine		Naturally aspirated engine	
Operating	Level	Operating	Level
100 OH	M0	100 OH	M0
2000 OH	M1	2500 OH	M1
4000 OH	M1	5000 OH	M1
6000 OH	M1	7500 OH	M2
8000 OH	M2	10000 OH	M1
10000 OH	M1	12500 OH	M1
12000 OH	M1	15000 OH	M3
14000 OH	M1	17500 OH	M1
16000 OH	M3	20000 OH	M4
18000 OH	M1	22500 OH	M2
20000 OH	M4	25000 OH	M1
22000 OH	M1	27500 OH	M1
24000 OH	M2	30000 OH	M5
26000 OH	M1	30500 OH	M0
28000 OH	M1	32500 OH	M1
30000 OH	M1	35000 OH	M1
32000 OH	M5	37500 OH	M2
32500 OH	M0	40000 OH	M6
34000 OH	M1	42500 OH	M1
36000 OH	M1	45000 OH	M3
38000 OH	M1	47500 OH	M1
40000 OH	M6	50000 OH	M1
42000 OH	M1	52500 OH	M2
44000 OH	M1	55000 OH	M1
46000 OH	M1	57500 OH	M1
48000 OH	M3	60000 OH	M7
50000 OH	M1		
52000 OH	M1		
54000 OH	M1		
56000 OH	M2		
58000 OH	M1		
60000 OH	M7		





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Maintenance operation	M0	M1	M2	M3	M4	M5	M6	M7
Pushrods inspected			X	X		X	X	X
Pushrods cleaned			B	B		B	B	B
Cylinder heads replaced (before cylinder head replacement, perform compression pressure test and enter in the log)		B	B	B	B	X	B	X
Cylinder liners replaced						X*3		X
Connecting rod replaced						X		X
Connecting rod bearing replaced						X		X
Crankshaft main bearing replaced						B*1		X
Crankshaft: shock absorbers replaced						X*5		X*5
Pistons replaced						X*3		X
Turbocharger: Bearing play checked			X				X	
Turbocharger cleaned (agenitor 312/408, avus 500 plus)			X	X			X	
Turbocharger cleaned (other modules)			X*3				X	
Turbocharger replaced (agenitor 312, avus 500 plus)			X	X		X	X	X
Turbocharger replaced (filius R06/106, patruus 100 EG/BG)				X		X	X	X
Turbocharger replaced (other modules)				X*3		X		X
Starter replaced			X	X		X	X	X
Ring gear replaced								X
Coupling replaced					X	X*2	X	X*2
Ignition								
Spark plug sockets inspected		X	X	X	X	X	X	X
Spark plug sockets replaced <every 4000 OH>		X	X	X	X	X	X	X
Spark plugs adjusted	X	X	X	X	X	X	X	X
Spark plugs replaced	B	B	B	B	B	B	B	B

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Maintenance operation	M0	M1	M2	M3	M4	M5	M6	M7
Ignition timing checked		X	X	X	X	X	X	X
Ignition timing adjusted		B	B	B	B	B	B	B
Wiring and plug connection on the ignition system checked and plugs retightened as necessary		X	X	X	X	X	X	X
Electrics								
Cable connection inside the generator checked for abrasion	X	X	X	X	X	X	X	X
Generator bearings greased (agenitor 312, avus 500 plus) with special grease		X	X	X	X	X	X	X
Generator terminals checked and tightened	X							
Starter batteries checked	X	X	X	X	X	X	X	X
Generator bearing replaced								X
Emergency Stop switch: Function test carried out			X	X		X	X	
Gas low pressure switch: Function test carried out (only if installed)			X	X	X	X	X	
Gel batteries in switch cabinet (ASF) replaced (only when present)		B	X	X	B	X	X	B
Exhaust system / Catalyst								
Exhaust gas line checked for fastening and tightness	X	X	X	X	X	X	X	X
Condensate drains (neutralization) checked and cleaned	X	X	X	X	X	X	X	X
Emissions measurement carried out, cat. replaced if necessary (if there are two gas types, an emission measurement must be conducted for each type)	X	X	X	X	X	X	X	X
Exhaust gas heat exchanger replaced		B	B	B	B	B	B	B
Lambda sensor replaced (only for not turbocharged engines)			X	X		X	X	X
Filter elements								
Gas filter in housing or in multiblock checked	X	X	X	X	X	X	X	X
Gas filter in filter housing or in multiblock replaced and leak test < every 8000 OH >	B	B	X	X	B	X	X	B
Supply air filter cleaned (if installed) Operator responsibility		X	X	X	X	X	X	X

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Maintenance operation	M0	M1	M2	M3	M4	M5	M6	M7
Air filter replaced		X	X	X	X	X	X	X
Filter inserts in the control cabinet, load control cabinet, sub-distribution cabinet replaced		X	X	X	X	X	X	X
Crankcase ventilation filter type CCV-15UT99 replaced (modules with electric power >100 kW)** <every 4000 OH>		X	X	X	X	X	X	X
Crankcase ventilation filter type CCV-15UT99 replaced (modules with electric power ≤100 kW)** <every 8000 OH>			X	X		X	X	
Raw and clean gas hose of crankcase ventilation inspected	X	X	X	X	X	X	X	X
Raw gas hose replaced		B	B	B	B	B	B	B
Clean gas hose replaced		B	B	B	B	B	B	B
Crankcase ventilation filter cleaned (other modules)		X	X	X	X	X	X	X
Crankcase ventilation filter replaced (other modules)		B	B	B	B	B	B	B
P&ID System								
Coolant level / pressure and content checked	X	X	X	X	X	X	X	X
Coolant refilled	B	B	B	B	B	B	B	B
Coolant replaced				X		X*3		X
Plate heat exchanger: Differential pressure measurement carried out	X	X	X	X	X	X	X	X
Table cooler checked	X	X	X	X	X	X	X	X
Table cooler cleaned	B	B	B	B	B	B	B	B
Throttle valve ball joints inspected and lubricated		X	X	X	X	X	X	X
Throttle valve ball joints replaced		B	B	B	B	B	B	B
Throttle valve actuator replaced								X
Actuator / stepper motor for throttle valve drive: spring return mechanism checked		X	X	X	X	X	X	X
Wastegate: Elodrive reinforcement set inspected (if installed)	X	X	X	X	X	X	X	X
Wastegate: Elodrive reinforcement set replaced (if available)	B	B	B	B	B	B	B	B
Wastegate drive replaced (if installed)			X	X		X	X	X

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Maintenance operation	M0	M1	M2	M3	M4	M5	M6	M7
3-way mixers: Function test carried out	X	X	X	X	X	X	X	X
Gas mixer checked	X	X	X	X	X	X	X	X
Gas mixture cooler cleaned <as necessary, but no later than the M5 maintenance>	B	B	B	B	B	X	B	X
Slide ring gasket replaced (exclusively with glanded pumps / like Grundfos TP)	B	B	B	B	B	B	B	B
Flashback arrester cleaned	B*	B*	B*	B*	B*	B*	B*	B*
Gas blower fan replaced					X	X*2	X	X
Gas blower fan: drive belt replaced			X*4	X*4				
All gas shutoff valves: Function test carried out	X	X	X	X	X	X	X	X
All flexible connection lines (water, gas) replaced								X
Engine ventilation: hose replaced				X		X		X
Machine feet inspected			X	X		X	X	
Machine feet replaced								X
Compensator upstream of gas mixture cooler (gas mix side), including clamps inspected, clamps tightened as necessary (agenitor 312/408/412/ avus 500 plus)	X	X	X	X	X	X	X	X
Gas mixture system: Leak test carried out with leak detection spray	X	X	X	X	X	X	X	X
Engine cooling system: venting carried out (bleed air out of system)	X	X	X	X	X	X	X	X
Gas and exhaust gas path checked for tightness	X	X	X	X	X	X	X	X
Valve housing of crankcase ventilation replaced (standard MAN engines)						X		

Key:

X*2: only for filius R04

X*3: except filius R04

X*4: only avus plus series

X*5: only 4 series including filius R04

B: as necessary

B*: as necessary by authorized personnel

B*1: except agenitor 408, avus 500 plus, filius R04

This quote is valid until July 29, 2022



CHP System Maintenance Agreement Options



Service Agreement Options



DEPARTMENT OF PUBLIC WORKS / WASTEWATER DIVISION

TREATMENT PLANT: 1100 CLARK FORK LN • MISSOULA, MT 59808 • (406) 552-6600
MAILING: 435 RYMAN ST • MISSOULA, MT 59802-4297 • FAX: (406) 552-6614

Memorandum

TO: Leigh Griffing, Procurement Officer
FROM: Wendy Gay
SUBJECT: Sole Source Vendor Designation
DATE: July 20, 2022

The City of Missoula Wastewater Division is requesting permission to designate 2G Energy Inc. (2G) as the sole source vendor for parts and service for the Wastewater Treatment Plant for the 2023 fiscal year. Under the City's purchasing rules, a sole source determination can be made under limited circumstances. Below is an excerpt from the purchasing policy and the italicized comments explain how 2G meets those criteria.

Sole source purchases. Under some limited circumstances, a department may need to consider making a sole source purchase for a supply or service available from only one known vendor. Because this purchase occurs without benefit of competition, departments should exercise great reluctance to use this procurement method.

- i. Sole source procurement is permissible under the following circumstances:
 - a. The compatibility of current services or equipment, accessories, or replacement parts is the paramount consideration;

2G is the manufacturer of the wastewater facility's combined heat and power (CHP) system. Authorized replacement parts are only available from 2G and there is no alternative supplier. Most of the parts are Original Equipment Manufacturer (OEM) by 2G and there is no alternative source. As part of the CHP System Maintenance Agreement, the City is required to purchase and maintain 2G recommended spare parts.

There is no alternative, equivalent product to the one required;



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There is no alternative, equivalent product to the one required;


- b. There is only one acceptable or suitable source for the supply or service item;

2G is the only authorized source for service as per attached 2G letter dated April 8, 2019.

- c. Grant terms specify the equipment to be purchased.

Not applicable

Approved:


Leigh Griffing (Jul 22, 2022 12:22 MDT)
Leigh Griffing, Procurement Officer

07/22/2022
Date

John Engen
John Engen (Jul 22, 2022 18:52 MDT)
John Engen, Mayor

07/22/2022
Date



July 22, 2022

To Whom it may Concern

The 2G group of companies is a leading international manufacturer of cogeneration power plants (CHP plants) as well as associated supplementary components, and with its national and international affiliated companies, it covers the entire value chain from the product development to the long-term maintenance of the plants.

2G Energy Inc is the affiliated company that is responsible for the distribution of the contract goods, the installation, the start-up as well as the maintenance and repair of CHP plants within the United State of America, Canada, Puerto Rico and Mexico.

2G Energy Inc is responsible to appoint qualified authorized service providers within the various territories where there is an installed based, or provide services to end customers directly.

At this time 2G Energy Inc is the only authorized service provider for 2G cogeneration power plants in your territory.

I trust that you understand our approach.
Please don't hesitate to contact me with any questions or concerns.

Dan Jones
COO
1-519-760-9478