

QUESTIONNAIRE FOR A GAS POWER PLANT

1. Contact information of the organization and the person completing the questionnaire

Name of organization: SPI OOO "SANEG"		Organization address:	
Full name:		Position:	
Phone:	Fax:	Mobile:	E-mail:
Your organization is:	<input type="checkbox"/> End customer	<input type="checkbox"/> Intermediary organization	<input type="checkbox"/> Other

2. Brief description of the project (description of the equipment installation site, tasks to be solved with this equipment):

Name of the organization, which is the end Customer: SPI OOO "SANEG"
Additional information about the project (name of the facility, characteristics of the equipment installation site):

3. Main parameters for equipment selection

3.1. Type and purpose of the generating unit: <input checked="" type="checkbox"/> Power generation only (diesel, gas or gas-diesel power plant) <input type="checkbox"/> Cogeneration (combined heat and power, mini-CHP) <input type="checkbox"/> Other (specify) _____	
3.2. Operating mode of the equipment <input type="checkbox"/> Standby generator (emergency) <input checked="" type="checkbox"/> Continuous operation (24/7) for not less than 8000 hours per year <input type="checkbox"/> Prime power (long-duration) <input type="checkbox"/> Other	
3.3. Proposed model (or single unit electrical power) and number of generating units (for example, "2 units of 1000 kW each")	1 unit not less than 2000 kW
3.4. Electrical parameters for equipment selection:	
3.4.1. Required total electrical power of the power plant (kW)	6000 kW (for startup of 3 compressor units of 1 MW each + 1 MW operating power in soft start mode. Starting currents 400–430 A)
3.4.2. Type of connection: <input type="checkbox"/> One generator for an isolated load (island operation, isolated from the centralized grid) <input checked="" type="checkbox"/> Parallel operation of several generators to a common load isolated from the grid (autonomous mode) <input type="checkbox"/> Parallel operation (synchronization) with the centralized grid or several generators (with export of electricity to the grid) <input type="checkbox"/> Other	
3.4.3. Maximum power consumption (peak load) at the site (kW)	3 MW (soft start available and increases 4 times)
3.4.4. Minimum continuous load (kW)	2000 kW
3.4.5. Generator output voltage: <input type="checkbox"/> 0.4 kV <input checked="" type="checkbox"/> 6.3 kV <input type="checkbox"/> 10.5 kV <input type="checkbox"/> Other	
3.5. Equipment installation site and environmental conditions: Outdoor	
3.5.1. Options for execution and installation of generating units: <input type="checkbox"/> Open version (installation on a foundation or in a structure) <input type="checkbox"/> Enclosed soundproof canopy (installation on the street <input type="checkbox"/> or indoors <input type="checkbox"/>) <input checked="" type="checkbox"/> In a container (installation on a site on the street) completely autonomous with all engineered infrastructure <input type="checkbox"/> In a modular block-building (lightweight structures)	<input type="checkbox"/> Other:
3.5.2. Territorial location of the installation site (region, city)	3. Atyrau, 40 m above sea level
3.5.3. Characteristics of the location (industrial facility, residential area, etc.)	Industrial facility, located in a desert area on the high sea coast
3.6. Need for a backup power source (diesel generator, etc.)	As per customer's agreement.
3.7. Requirements for additional equipment (optional):	Additional gas filter for cleaning, gas flow meter, electricity meter, air filter for engine areas near the sea and desert. Load bank for load testing, synchronizer for parallel operation, see full description in Technical Requirements. Power supply from own needs 0.4 kV. In case of failure of one compressor MGU or two MKU, consider the possibility.

Automatic power regulation
of the power plant without
load device – upon
confirmation of calculations.

3.8. Type and characteristics of the fuel used:

- | | |
|--|--|
| <input type="checkbox"/> - Diesel fuel (100%) | <input type="checkbox"/> - Diesel fuel + gas (dual-fuel gas-diesel unit 30%/70%) |
| <input checked="" type="checkbox"/> - Main natural gas (methane),
methane number = 76.62% | <input type="checkbox"/> - Other (associated petroleum gas, liquefied propane-butane, biogas, etc.)
(for any gas except methane, provide component composition) |
- ☐ - It is necessary to provide a tank for diesel fuel _____ liters or _____ hours of autonomous operation

3.8.1. Technical conditions for gas supply and limits:

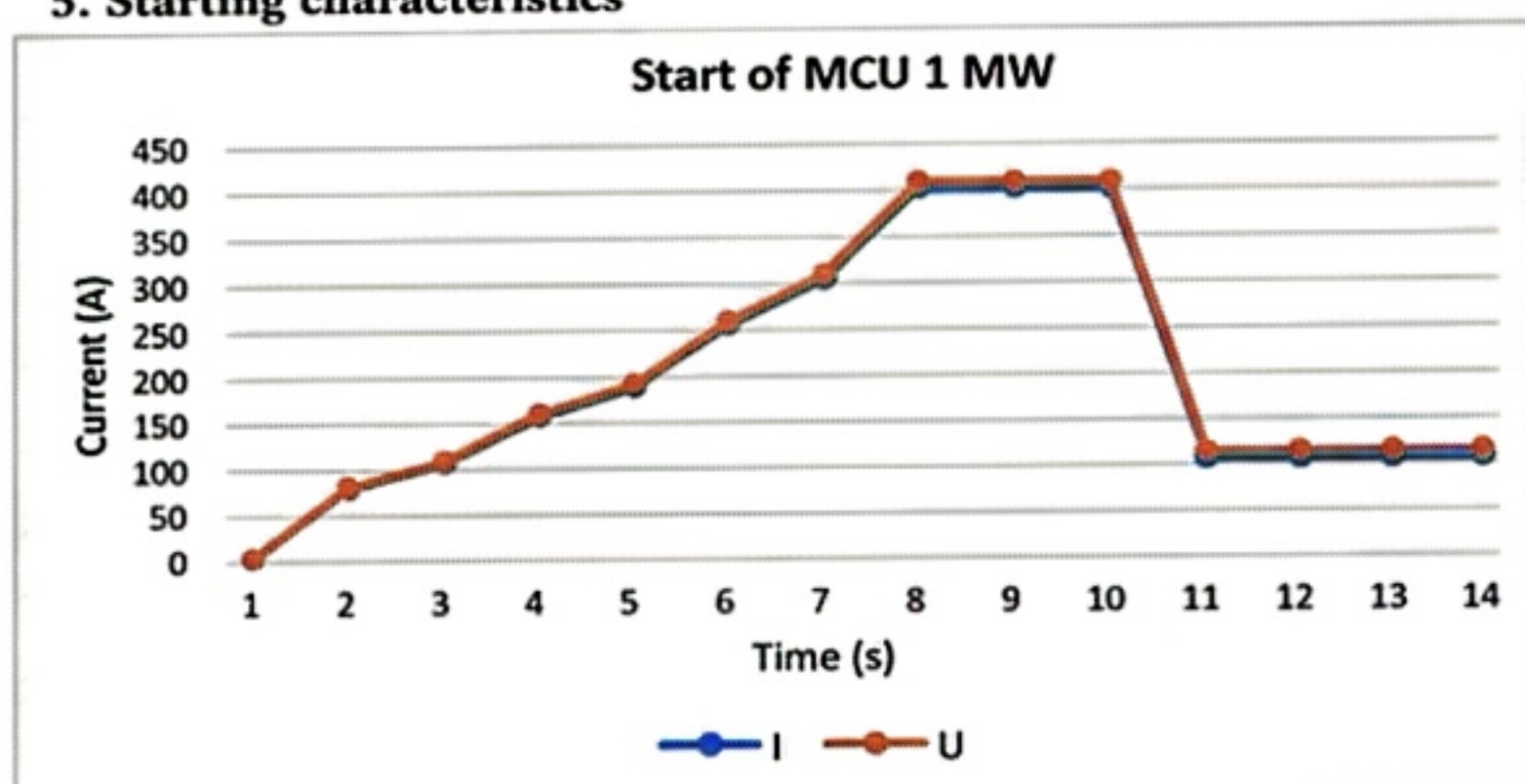
Obtained ☐ Available in insufficient volume ☐ No ☒

4. Additional options and auxiliary equipment

4.1. Additional options and auxiliary equipment:

- Coolant heaters		+
- Battery charging devices		+
- Generator winding heating		+
- Additional pumps for pumping fuel, oil, etc.		+
- Additional tanks (fuel, oil, etc.)		+
- Additional sound insulation		+
- Additional switchgear equipment:		
- Automatic transfer switch (ATS)	+	Switchgear with 3 inputs and 4 outgoing lines, TN, TCSN.
- Control panels	+	
- Common busbar panel for parallel operation of generators	+	
- Remote monitoring system (SCADA) in a unified workstation		+
- Spare parts kit for 2000 operating hours, etc.		+
- Warranty period not less than 2 years after commissioning		+
- Gas pressure reduction unit		+
- Gas purification filter		+
- Gas drying filter		+
- Container cooling and heating		+
- Fire extinguishing and fire alarm system		+
- Auxiliary power switchboard included		+
- Load bank in case of emergency shutdown of a 1 MW consumer		+
- Repair tool kit (wrenches, filters, seals, belts, etc.)		+
- Container lighting		+
- Outdoor lighting using photo relay		+
- Emergency mode recording system covering all connections		+
- Server room, electrical room, gas pipeline inlet unit		+
- Remote access		+
- Computer with software for monitoring and control of the power plant		+
- Oil tanks with automatic supply		+
- In case of air-start system, include receivers and compressor		+
- Other – specify:		

5. Starting characteristics



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