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Implementation of a solar-diesel power plant in decentralized area
of the Republic of Altai
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More than 16 million residents in Russia refer to the decentralized power supply. Human need for electric energy is doubling every 10-15 years. Stand-alone sources of energy are used in the territory with decentralized power supply. In the paper it is considered an example of the Republic of Altai, which uses one of the first in the world solar-diesel power plant. Until that time, a diesel power plant has operated for many years.

Villagers of Yailu are provided with electricity only sixteen hours a day. It is associated with the limited capacity of the diesel power plant, rate issues and difficulties with the purchase and transmission of fuel. Solar-diesel power plants represent a new solution to the problem. That combines energy of the sun and diesel generation.

The solar-diesel power plant was built in a short time, in the period from November 2012 to March 2013. The project was implemented within the framework of a state contract of Ministry of Education and Science of Russia on creation pilot projects in the field of solar energy, implemented in the framework of the Federal Target Program «Research and development on priority directions of scientific-technological complex of Russia». At a power plant was installed equipment from leading manufacturers. On the one hand, this project was a scientific research. On the other hand, it provides continuous power supply for one of the most remote areas of the Republic.

Power plant implemented in the Republic of Altai consists of: diesel engine and alternator (made in Japan) – device which generates electricity via fuel combustion; solar panel (made in Japan) – converts solar energy into direct current; inverter (made in Germany) is device that converts direct current to alternating current, and change, voltage and frequency; battery (made in China) is used for energy storage; controller (made in Turkey) monitors the battery charge. Made by «SMA», «YANMAR», «DATAKOM Electronics Limited» and others.

Solar-diesel power plant has a number of advantages:

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| 1. Safer for the environment. | 5. Long service life. |
| 2. No need to connect to the centralized power grid. | 6. Reducing diesel fuel consumption. |
| 3. Fully stand-alone system. | 7. Power plant operates 24 hours a day. |
| | 8. Reducting the cost of electricity. |

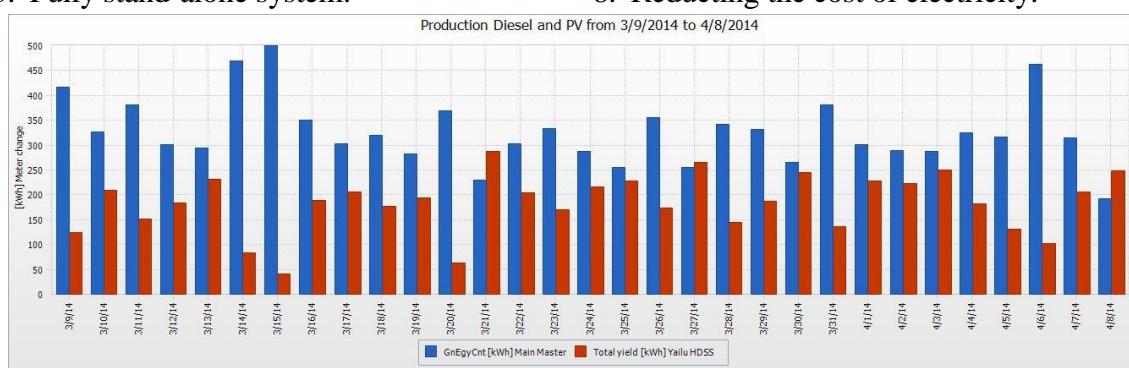


Figure 1 – Diagram of the production of electricity solar – diesel power plant.

Solar-diesel power plant has several of disadvantages:

1. The need to accumulate energy produced by solar modules.
2. High construction costs associated with the use of trace elements (indium and tellurium).
3. The need for periodic maintenance.

Hybrid power plant in the Republic of Altai is able to provide reliable, stable power supply for remote areas (See Figure 1).

Operating solar-diesel power plant has reduced by 50 percent the annual consumption of diesel fuel and saved 1.8 million rubles.

Developers are going to continue the experiment. Such power plants should be built in areas with high level of diesel generation. These are Yakutia, Tuva Republic, Transbaikal territory, Far East. It will lead to reducing budget expenditures.

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New prototyping of Google Corp. will travel in Global Business: Google Glass

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In our day and age, technology is omnipresent and an integral part of our live. However, although the main purpose of technology is to make our life easier, the reactions and opinions on technology are very diverse. Every people would like to make our life easier. Google glass can solve this problem. It is absolutely new design from Google. You can see the world more colorful. For example, you may capture all that happened during the day. Walking down the street, you often look into your smartphone and it may be dangerous for your health: you can stumble and fall. With Google glass you forget about it. Interaction with user happens by voice commands. Some words helps you enter the Internet, use map, and check weather. As a result, Google glass includes three main functions: augmented Reality, mobile telephony+ Internet, video diary [1].

Touchpad: A touchpad is located on the side of Google Glass, allowing screen. Sliding backward shows current events, such as weather, and sliding forward shows past events, such as phone calls, photos, circle updates, etc. Camera: Google Glass has the ability userstocontrolthedevicebyswipingthroughatimeline-likeinterfacedisplayedontheto take photos and record 720p HD video. While video is recording, the screen stays on while it is doing so. Display: The Explorer version of Google Glass uses a Liquid Crystal on Silicon (LCoS), field-sequential color, LED illuminated display. The display's LED illumination is first P-polarized and then shines through the in-coupling polarizing beam splitter (PBS) to the LCoS panel. The panel reflects the light and alters it to S-polarization at active pixel sites. The in-coupling PBS then reflects the S-polarized areas of light at 45° through the out-coupling beam splitter to a collimating reflector at the other end. Finally, the out-coupling beam splitter (which is a partially reflecting mirror, not a polarizing beam splitter) reflects the collimated light another 45° and into the wearer's eye [3].

Technical specifications it is based on Android 4.0.4 and higher, 640×360 Himax hel-loHX7309 LCoS display5-megapixel camera, capable of 720p video recording, Wi-Fi