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SUMMARIES

UNDERGROUND GAS STORAGE AS OPPORTUNITY TO COVER WINTER PEAK DEMAND.

T.Shoshiashvili, I.Lomidze. "Energy". №2(78). 2016. Tbilisi. p. 5-9. geo. sum geo. engl. rus.

The paper addresses the most important issue for Georgian energy security – the necessity of the construction of underground gas storage. Winter peak demand deficit creates problems in Georgian gas distribution system. This made Georgian authorities start negotiations with Gazprom. The construction of underground gas storage will first of all solve the problem of seasonal imbalance in gas delivery that will ensure energy independence of the country. In addition, the construction of underground gas storage on Samgori South Dome oil field will create full strategic reserve of natural gas that will meet the EU standards. Bibl. 6.

STANDARDIZATION OF HIGHER ORDER HARMONICS IN GEORGIA AND ABROAD.

D.Sharikadze. "Energy". №2(78). 2016. Tbilisi. p.10-13. geo. sum geo. engl. rus.

The analysis found that none of the standard indicators of the quality of electricity is not established, the normal and maximum permissible values of "distortion factor of the voltage waveform sinusoidal" for 110-500kV. It is recommended. Georgia determine the sources of pollution and energy options, define their restrictive measures, which will ensure the minimization of losses, power quality improvement, according to energy efficiency improvement and other. Bibl.5.

SETTING OF POWER SUPPLY TARIFF WITH GRADIENT METHOD. V.Sharikadze. "Energy". №2(78). 2016. Tbilisi. p. 14-18. geo. sum geo. engl. rus.

Gradient method for setting a tariff may be considered for the purposes of defining the economic efficiency at the stage of designing the construction of hydro power station. The mentioned approach may be used, when the tariff set up under the project exceeds the tariff limit recommended by Georgian National Energy and Water Supply Regulatory Commission. In a way of setting the power supply tariff by gradient method, we can transfer lots of hydro power stations to be constructed into the economic-effective category in such way that investor will not be damaged during the length of financial wear as well as purchasing capacity of consumers will be taken into account. According to this methodology, we are able to make hydro power station economically effective at the stage of design, as well as if the project will be previewing during construction, according to which the cost estimation will be increased and therefore tariff defined under the project will be increased. Series of calculations must be conducted in connection to aforesaid according to construction of different new hydro power stations, which will simultaneously satisfy the investor and take the consumer's and state interests into account. Ill.1, tabl.1, bibl.1.

"CLIMATE CHANGE" AND "PARIS AGREEMENT" GOAL FOR GEORGIA.

N.Arabidze, M.Arabidze, N.Jamburia. "Energy". №2(78). 2016. Tbilisi. p. 19-22. geo. sum geo. engl. rus.

Currently, a renewable energy potential of Georgia is not fully utilized. While, it is considered that attract investments in renewable energy will promote use of electricity, at the regional level, reduction of the greenhouse gas emission and increase the level of energy efficiency. After signing the association agreement between Georgia and EU, Georgia is committed to implement the EU Directives and gradually transpose into the national legislation, which will improve the environment of Georgia. Bibl. 5.

JOINT ANALYSIS OF THE DATA FROM THE CONTINUOUS MODE TILTMETERS IN THE 12TH SECTION AND THE REVERSE PLUMBLINES INSTALLED UNDER THE RIGHT WING OF THE ENGURI ARCH DAM. V. Abashidze, T. Chelidze, T. Tsaguria, N. Dovgal, L. Davitashvili. "Energy". №2(78). 2016. Tbilisi. p. 23-28. geo. sum geo. engl. rus.

The work describes the behaviour of the fault crossing the dam foundation under the right wing of the Enguri Arch Dam, the data of which are obtained by means of continuous mode tiltmeters and reverse plumblines. The right bank fault of the river Enguri is located at 400 m level under the Enguri Dam. In 1980 reverse plumblines SGS-14 was installed at the internal, streamside block B at 360 m level and reverse plumblines SGS-13 – at the external block A in order to study the behavior of the fault. In 2000 the plumblines were restored. In our article the material obtained exactly since this year are used as far as they are more reliable. In the work the material on the fault dynamics received from the reverse plumblines is compared to the data of the tiltmeter installed in the immediate vicinity of the reverse plumblines at 360 m level in the 12th section and the tiltmeter at 402 m level at 40 m vertical distance in the same section of the dam. As a result of the joint analysis of the material we determined that the behavior of the blocks divided

by the fault depends on the regulation of the water level in the reservoir. The persistent of the blocks in any direction is not observed in analyzed period. Ill.2, bibl.5.

INSTALLATION FOR PURIFICATION OF EXHAUST GASES. *L.Papava, L.Gugulashvili, E.Sadagashvili, G.Gugulashvili.* "Energy". №2(78). 2016. Tbilisi. p. 29-35. geo. sum geo. engl. rus.

It is considered harmful impact of exhaust gases on the ecological state of the environment. It shows, that improvement of ecological state of the environment is possible through exhaust gases purification. It describes the basic methods and plants for purification of exhaust gases. Presented a new method and installation, which are based on the simultaneous mechanical, hydraulic, chemical and refrigeration impact on contaminants exhaust gases. Ill. 1, bibl. 6.

GEOHERMAL ENERGY - THE POSSIBILITIES OF IMPROVEMENT AND THE PRODUCTION. *K.Vezirishvili-Nozadze, L.Papava, M.Razmadze, N.Mirianashvili.* "Energy". №2(78). 2016. Tbilisi. p.36-41 geo. sum geo. engl. rus.

On the basis of the corresponding analysis we appreciate areas and scales of application HCS on objects of Georgia. The received economy of fuel from introduction HCS in various branches of a national economy will make: in hou-setoid sector - 45%; in an agriculture - 34%; on objects of light industry - 27%; on objects construction materials - 25%.

The modern condition of a fuel and energy resources in conditions of transitive economy and a place of geothermal energy in power balance of the country are determined. Ill.1, tabl.1, bibl. 3.

PERSPECTIVES OF USE AN ENERGY POTENTIAL OF SUN IN TBILISI.

I.Zhordania, K. Vezirishvili-Nozadze, N. Mirianashvili, N.Gdzlishvili, V.Bakhtadze, V.Khatashvili, T.Nozaдзе, T. Tsotsonava-Durglishvili. "Energy". №2(78). 2016. Tbilisi. p.42-48. geo. sum geo. engl. rus.

The energy potential of sun of Tbilisi, technical and economic aspects of its use and development perspectives is estimated.

Duration of solar light in year and enough high values of the monthly sums of solar radiation, give the basis to assume, that solar energy use in Tbilisi can reach enough high level the next decade.

The hotels, processing manufactures of agricultural products can be the potential consumers of a solar energy, etc. Ill. 2, tabl. 3, bibl. 10.

THE ANALYSIS OF PERIODIC FLUCTUATIONS OF CURRENTS THE ENGINES WHICH HAVE ARISEN IN REPUL-THE SIONNYKH THE ELEKTRICHKSKIKH. *Z.Mchedlishvili.* "Energy". №2(78). 2016. Tbilisi. p.49-54. geo. sum geo. engl. rus.

In the presented work transition working processes the modes working both in motive and in generating when depending on an angle of rotation of the brushes which are on a collector the exciting and also anchor currents change occurring in single-phase asynchronous the repulsivnykh collector engines are considered and owing to it there are self-excited fluctuations of the currents passing in car windings. Ill. 2, bibl. 12.

DOUBLE-WOUND THREE-PHASE ELECTRIC MACHINE. *A.Rikrikadze, G.Makharadze.* "Energy". №2(78). 2016. Tbilisi. p.55-57. geo. sum geo. engl. rus.

In the article is considered two wrapping three phase electric machine, its electric circuit. Is shown its technical and economic advantage over the existing three phase electric machines. The article would be interesting for engineering and technical personnel engaged in this area. Ill.2, bibl. 3.

RISK ASSESSMENT OF THE REFRIGERATOR-EQUIPMENTS WORKING ON AMMONIA

S.Gigauri, L.Chkheidze, N.Machavariani. "Energy". №2(78). 2016. Tbilisi. p.58-63. geo. sum geo. engl. rus.

The following paper discusses risk assessments of the refrigerator-equipments working on ammonia, considering the metrological conditions and quantities of chemically dangerous substances. In addition, there is provided calculation of the ammonia in the intoxicated air that is transferred to the primary and secondary cloud, distance of diffusion of the toxic clouds and attainment time to the settlement. Ill.3, bibl. 5.

USE OF CINDER ASH OF THERMAL POWER PLANTS IN THE PRODUCTION OF NEW GENERATION CEMENT. *A.Nadiradze, A.Kankava.* "Energy". №2(78). 2016. Tbilisi. p.64-72. geo. sum geo. engl. rus.

There is considered in a given article the classification and technical parameters, as well as established standards of fly ashes, which are applied in the production of cement and concretes; the fields of their application as in foreign countries, so in Georgia as well. There is given detailed information on basic physical-chemical properties of slag ashes as well as recommendations on their recycling and application. Bibl. 3.

DISTORTED STRUCTURES IN PHASE TRANSITIONS IN PRASEODYMIUM ALUMINATES’.

E.Zeragiy, L.Darchiashvili, Z.Chachkhiani. "Energy". №2(78). 2016. Tbilisi. p.73-76. geo. sum geo. engl. rus.

The purpose of the description of a series of phase transitions in the crystal praseodymium aluminates’. Previously, an attempt was made to carry out such a description, based on the phenomenological model. This model is identical to the first phenomenological model of barium titanite, and not enough to describe the orthorhombic phase.

Part of the form - the floors factor praseodymium on Fg level change in a low symmetric phases: the level is split. Similarly, we obtain that term T_{2g} split equally. This result allows us to construct a theory of splitting Pr^{3+} terms. Bibl. 7.

RELATION OF COMPUTATIONAL LAYOUT OF MODIFIED METHOD OF FINITE DIFFERENCES TO THE RESPECTIVE LAYOUTS OF ANALOGOUS METHODS.

V.Lomidze, D.Chichua. "Energy". №2(78). 2016. Tbilisi. p.77-78. geo. sum geo. engl. rus.

Computational layouts of modern engineering method for structure computation against analogous layout of modified method of finite differences are analyzed. Bibl. 2.