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Utilization of Electrical Vehicle Power to Different Load

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Abstract: When the power is in control of its own fleet of vehicles, the power grid will experience an increase in the amount of fluctuating energy consumption depending on the nature of the load presentation. Depending on the drawing density, electric batteries can be integrated to create a new volume of the overall load profile can increase the voltage of the tips. Fees and charges the pattern is not random, as they can affect the driver's travel habits and charging capabilities, which means that ANY integration as well as a significant impact will have cargo.

An increasing number of loads and peaks in load may lead to the need to upgrade the network infrastructure in order to reduce the risk of loss, abandoned services and or damage to any components. But with well-designed incentives for users, the HOME variable that is in the electric vehicle charging (EVC) - based power consumption can be flexible load, which can help in the energy system load and reduce charging at the tips.

Keywords: Electric Vehicle, Impact, Utilization, Power system , Load etc.

I. INTRODUCTION

In India, a car, on average, goes for 1 hour a day for the remaining 23 hours, it is assumed that they are either at home or in the office. The average distance that is driven every day is about 30 km, but a typical electric car (AT HOME) has a maximum range of about 100 miles, which means that most of the day it will travel about 70 miles so that the battery capacity value remains inside the car. In addition, it is necessary for electric vehicles to have a 100 kW engine to carry out the corresponding road changes on the highway.

Therefore, electronic vehicle systems are already set to affect the level, the standard for connecting an ac vehicle. Therefore, most vehicles have a lot of time parks and the existing vehicle system, capable of consuming or providing basic power, is available online and in-app. Grid integrated into vehicles (V) CAN be built with communications and management software enabling interaction with the energy system. The ARM with vehicle-to-grid (V2G) function, can also provide battery power by using the right electronics category, back to the grid. AS it relates to control (and/or service provider rank), V2G deals with additional network class capabilities.

This project, designed, built and tested cars and V, as well as V2G capabilities, because the latter, even more complex technical standards, equipment and comfort reasons. The system and regulatory framework that this was a test can be applied here, or with for WORK-for free, features that are suitable for working with V2G. It had to provide for maintaining the low-voltage end of the distribution. 15-kilowatt-san from the Internet, you can use the network, and as a vehicle keep the capacity of 30 kilowatt-hours in the facilities not only for a short time on vacation/charging, and therefore better suited to energy markets that do not provide the main load capacity.

II. OBJECTIVE

The Energy Commission established Concurrent Technologies Corporation to conduct analysis and obtain analysis results that support vehicle network connectivity and use like an electric car battery. The goal of the project is to demonstrate improvements that, like electric vehicles (PEVs), demonstrate the benefits of vehicle-to-grid (V2G) technology.

With V2G technology, film, documentary, facts, car movement will act as a distributed battery" on the network. When the V2G part of the project is complete, the Technology Corporation's partners should evaluate the battery health, systems, and testing process to determine whether your battery is suitable for storing other people's energy to use the software, such as support, online or at your local power supply.

III. LITERATURE REVIEW

A. Vehicle-to-Grid Technology: State-of-the-Art and Future Scenarios

An overview of V2G (vehicle-to-grid technology) technologies that are presented in this article. For this purpose, it is designed to emphasize the main functions, requirements and capabilities of V2G. Then, after a brief overview of the most popular strategies for filling HDPE (like electric vehicles) in the V2G concept, specifically highlighting its potential for both generating revenue and owning a HDPE; this is mainly related to the ability of V2G to provide additional services such as load balancing and inventory management. These solutions have been thoroughly studied in the literature, both from an economic and technological point of view, and are presented here. In addition, the requirements of V2G must be taken into account: the need to move, the charger of the station for the presence of PEV corresponding to aggregate architectures. Finally, there were also çatdırılmalı, future trends and scenarios.

B. Vehicle to Grid Services: Potential and Applications

Electric vehicle (DOM) technology is expected to account for a large share of light vehicles in the market in the next few decades. Charging electric vehicles will create an additional load on the distribution network and in some cases will be adjusted to do so. This article examines the potential and application for vehicle-based network services (V2G), including active power services, that any batteries and power for quality services are not exposed to the battery pack or simply need a small amount of energy in the battery. The positive and negative aspects of each service will be discussed, as well as the likelihood that each service will be efficient and environmentally friendly in the future. In addition, infrastructure, term of use and cost of V2G services compare their quality.

C. Bi directional Vehicle to Grid interface

The new placement of intelligent networked storage systems plays an important role in optimizing asset utilization practices that provide reserve capacity and peak usage. This concept is becoming increasingly critical in the context of high-energy microgrids and renewable energy sources. Plug-in electric vehicles offer a large distributed storage capacity, which is beneficial for the technical and economic operation of these systems. This paper presents a comprehensive implementation and management of a bidirectional power converter for vehicle network integration, which is based on a bidirectional DC/DC converter followed by a full bridge DC/AC converter. The cost of receiving topologiya and its control is carried out by modeling and experimental validation.

IV. BLOCK DIAGRAM

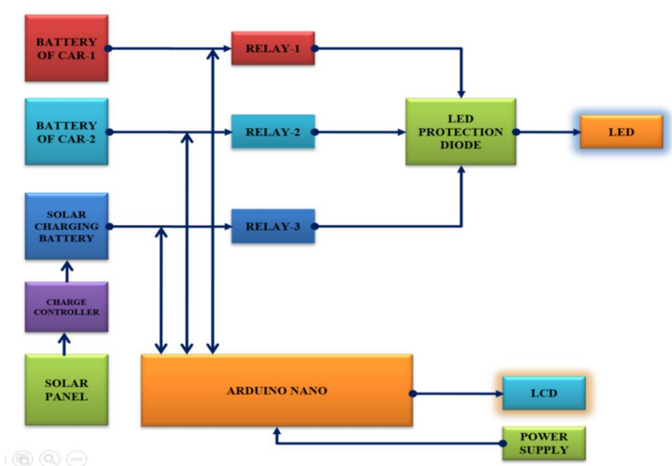
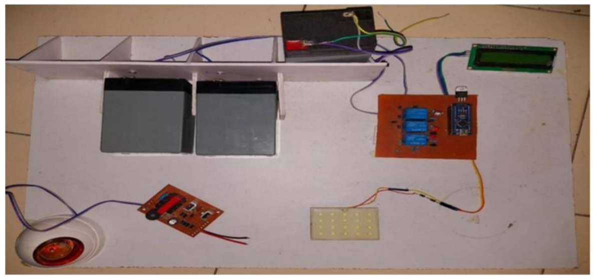


Fig. 1. Block Diagram of system

V. WORKING

In the prototype system, we plan to use 2 batteries of the car battery type, which is connected to the inverter via a relay. Batteries are compared to solar energy connected to an inverter via a relay. Control relay, control unit (NANO), battery voltage level monitoring. When the battery is discharged to 50%, it will be removed and the other battery connected to the system. If the car battery needs to be disconnected, it works, the solar panels and the battery will connect to your inverter. In the daytime, at any time if required for solar panels, the inverter is powered directly on batteries that it will not use in the daytime where there is sun.

VI. PROJECT HARDWARE



All parts and components of the equipment intended for installation or use together with our team. First of all, the voltmeter is designed with a liquid crystal display and an ARDUINO board. When the relays in the system are presented. Now with the use of ARDUINO and relays, you have to work, for example, with a voltmeter, as well as experience working with projects. A relay is a system interface. Output relays that are provided by the inverter, and it is on this interaction path. The output of the inverter is fed to the load (POINT B (5). Now the interface for the hardware is regularly placed on the board. Above the bar is an on-site parking system.

VII. ADVANTAGES

A. Reduced Dependence on Fossil Fuels

Solar energy production does not require fossil fuels, and therefore does not depend on being in limited and expensive natural resources. Although there may be some differences in the amount and time of sunlight during the day, season, year and years, the correct size and installation of the system can be designed so as to be very reliable, at the same time, it provides a long-term, stable electricity price.

B. Environmental Advantages

Solar power generation, which produce electrical energy with limited environmental impact compared to other forms of electricity generation.

C. Flexible Locations

Solar power can be installed on the client side, which reduces the necessary investment, production and transportation infrastructure.

D. A Car Battery Is Simply An Energy Storage Device

Your car uses the energy stored in the battery to operate the starter motor, ignition system, fuel injection system and other electrical devices for the engine during engine cranking and starting. It supplies all the electrical power for a car whenever the engine is not running and it helps the charging system provide electricity when current demands are above the output limit of the charging system.

VIII. APPLICATIONS

A. We are mutually using both solar panel and car batteries from vehicle to supply the isolated system such as parking area.
B. Here the main purpose of the project is to utilize the small amount of energy from the car batteries which is being unused and decrease the dependence on non-renewable energy.

IX. RESULT

A. CAR BATTERIES and SOLAR POWER batteries give 12V DC which the INVERTER converts to 230V AC. (optional)
B. CHARGE CONTROLLER restricts the overcharging of battery by reverse flow of current.
C. RELAY operates as per there priority given to them in the program.
D. ARDUINO NANO addresses each of the component their function and time of their operation.
E. LCD Displays the voltage of batteries.
F. The load (LED Light) here is operated effectively.
G. As a whole the system works efficiently and effectively.

X. CONCLUSION

The vehicle to grid is the project that demonstrated and worked as per the requirement in the demo. The car batteries are used to supply the LED lights of the grid and the controller logic is that the car battery will not discharge fully and shift to the other car battery. If all car battery disconnected then regular battery will turn ON.

XI. FUTURE SCOPE

In future, electric vehicles come with grid power connections and solar PV panel connect to battery of EVs. Most of peak load needs energy from vehicle generation. Vehicles provide proper services to the grid. There has been an increasing interest among some famous companies towards Some of them are- Ford, DaimlerChrysler, Honda, EPRI, AC Propulsion.

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