

“DESCRIPTIVE ANALYSIS OF SUPERCONDUCTOR MATERIALS IN ACTIVE VEHICLE WIRING”

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ABSTRACT

The power distribution systems are those systems in the state, power transmitted from the passive to active networks in the used of the superconductor materials. The superconductor Materials wires in active Network Distributions generator (DGs) this is a technical challenger, of the Activation Networks is the maintain high voltage level. There are conventional power distribution active network are made by the assumptions of one directional power flow in the active power level balance in the each bus, Active power level balance in the each bus, circuit voltage at all common Generator, Rejection factor at all the active distribution Networks (ADNs), A planning development power transmission line voltage is increase model for active distribution network (ANDs), planning is the proposed considering the planning the planning goals, the Mechanical model Technical and Economical Contributions. The conductor materials in distribution Network with the various distributions energy resource (DER) into the superconductor materials with load growth and the increased consumers expending have a significantly changed the existing distribution networks. The work flexibility in the active distribution network (ADNs), of power control switched ability of (AND) has been significantly and the improvement by the used of power stored and energy electronic devices which as the Technical problem in the coordination of the various controllable resources and the power source and energy source controllability can not be full Transforms into the system superconductor materials in the Research work an analytical work for Economical Contributions of the active distribution network (ADNs) is the proposed by the quantifier the superconductor materials.

The Superconductor materials is used in Electric power transmission of lines and high sheared Distribution Generator (DG) integration the voltage is very higher and magnitude, frequency and the intensity dimensions are founded in (ADNs) operation. The superconductor materials is Application Voltage regulation is very high And power flow various controllable electronic devices, such as soft open points (SOPs) and the power storage system (ESS) is efficiency is increase and improve the index of the systems are superconductor wires and under the unified and the descriptive analytical work the potential benefits of the system controllability are the electric power generation systems.

Key Words: Distribution Networks (ADNs), Economical Contributions, Efficiency of the superconductor Materials, Efficiency of the power storage system, Saving of Energy Generation Systems

1. INTRODUCTION:

There are conventional power distribution active network are those made by the Assumptions of the one directional power flow active power level in the each bus, scheduled voltage at all common generator bus, scheduled Rejection factors at all the active distribution network (ADNs). To achieve more factor in the research work Economics, may competitive Sustainable, economics entities and the increase the renewable energy sources (RES) in their generation of the maximum the first all of substitution of distribution of dispatch able generation it is the capacity with (RES) has imposed the considerable challengers on the planning and the operation of the power systems cause the substantial in the power generation load balance and the effective utilization of the renewable energy source.

These challengers of these technical problems effectiveness is an emerging the research area concerning the power system in the superconductor materials is the required and the attached much research work in the uncertainty and the renewable energy resource in the present, different properties of the power system in the characterizations and the various time scales this paper aims to propose a method to quantify the into hour Superconductor materials in Electric power transmission line.

2. Active Distribution Networks (ADNs)

Active distribution network (ADNs) are those distribution network, is used and advantage of information and communication Electrical and Electronic technologies to work proactively the access to the large-scale distributed energy distribution network,

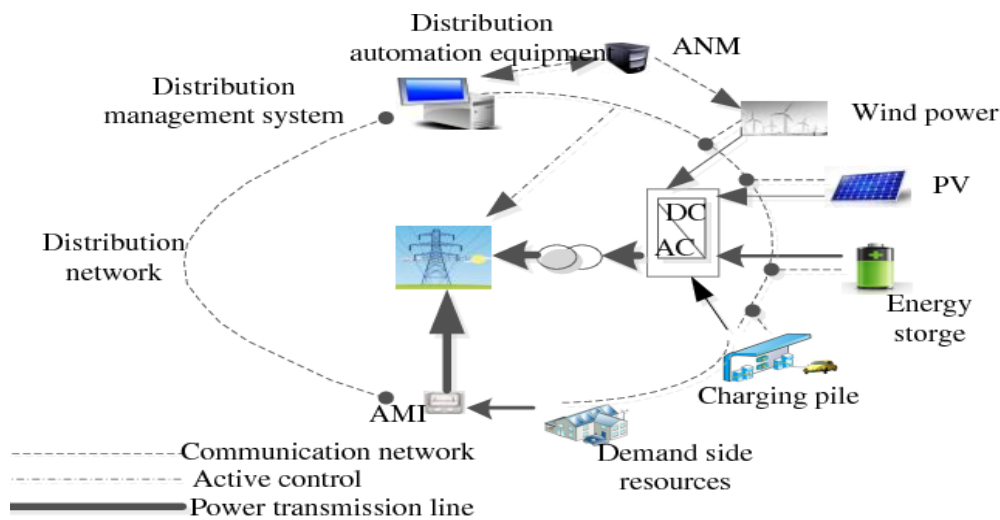
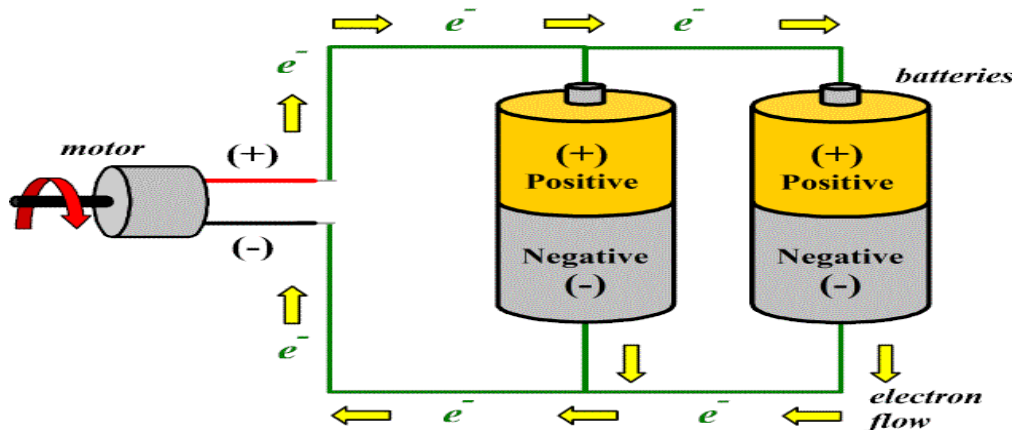


Figure: 1. Active Distribution Network

, It can coordinate intermittent renewable energy and energy storage devices and other distributed energy units to achieve safety and transportation **systems** that receive inventories of goods and then deliver them to customers. Place to control the power Generations systems in power a combination of distributed energy source (generators, loads and storage)."

3. Power storage systems



Operational power store in Batteries are connected in parallel the free electrons are moving in batteries negative end to Positive end is most important device property of electric power Transmission systems and essential for mitigating disturbances in a power system such as outages or forecast deviations of either power in-feed, that is from Photovoltaic (PV) units, or power out-feed, i.e. load demand.

The balancing supply and availability of sufficient operational superconductivity Materials is Transmission of power resource necessary prerequisite for the effective grid integration of large shares of fluctuating power in-feed from variable RES.

4. Working of Power Storage System

Electricity cannot itself be stored on any scale, but it can be converted into other forms of energy it is can be stored and later reconverted to electricity on the demand Storage systems for electricity include battery, flywheel, compressed air, and pumped hydro storage.

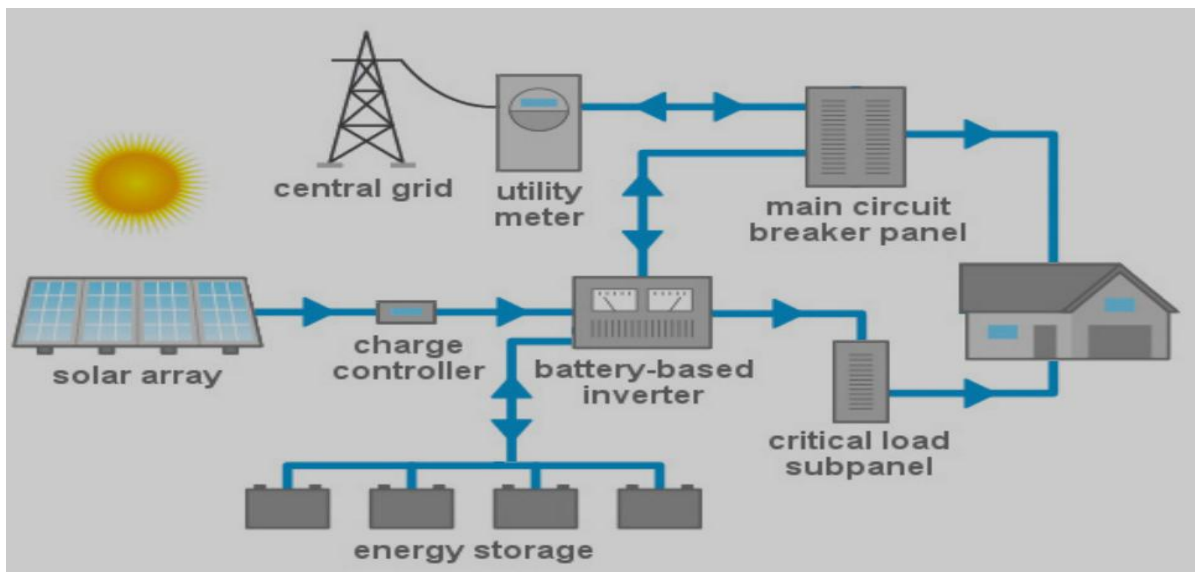


Figure: 3. Electric power Storage System

Working of the Electric power Storage device in the Electrical output power in the energy storage systems is Direct Current DC power and it is required to be converted into AC Alternating Current in the using power electronic controlling devices and the output to the Energy grid the energy flow from the EESS Power transmission of lines.

Electric Energy Storage system (EESSs) plays three main roles—lowering the electricity supply costs by storing energy at off-peak rates, improve reliability at times of unexpected failures or disasters, and maintain and improve power quality (frequency and voltage).

Power storage system (PSS) are three types of Applications (A) Transportation Application –Batteries, Flywheel, Ultra capacitor (B) Emergency Application- Batteries, Compressed air in vessels, flywheel, Hybrid Systems, Thermal energy storage, ultra capacitor (C) Large Scale Application- Batteries energy storage systems (BESS), Compressed air energy storage (CAES), Flywheel energy storage systems (FESS), Pumped Hydroelectric, Superconducting magnetic energy storage (SMES), Ultra Capacitor.

5. Distributions Energy Resource (DER)

The Distributed generation of an energy, Natural gases old data 21.7%, Nuclear Energy is 11% , Oil 5% , Coal is 41% Hydro Power 17% and other Energy souses 5% present Time Application of energy word Natural gases 25% Nuclear Energy is 12%, Oil 6%, coal 38%, Hydro power plant Energy is 15% and Other 8% distributed energy, one site generation or district and decentralized energy, an electrical energy generation and storage in by the variety of small, grid-connected to the transmission distribution system-connected devices referred to as the distribution energy resources.

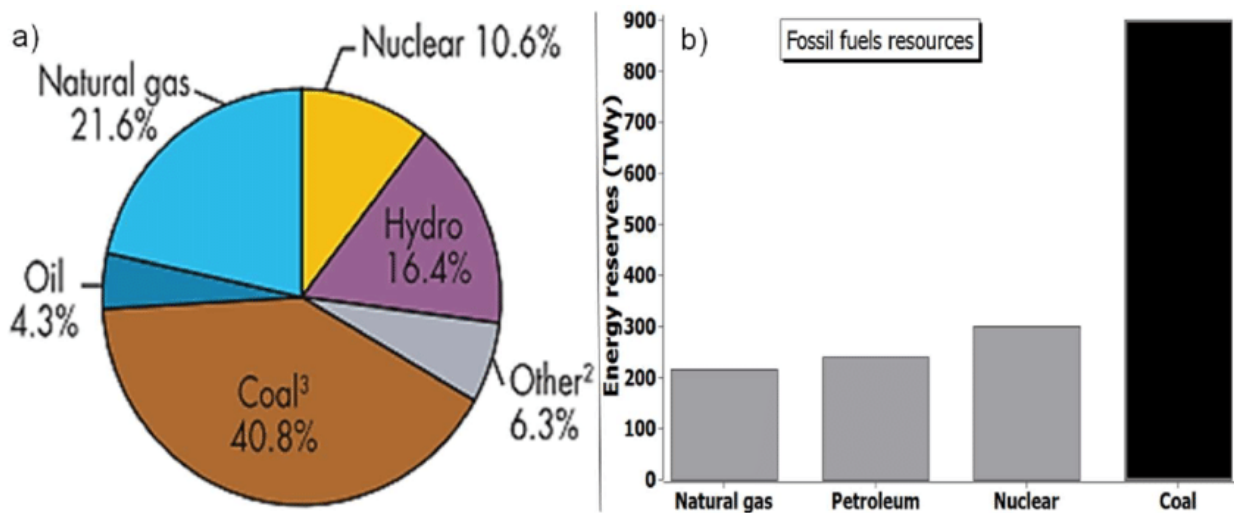


Figure: 4. Distributions Energy Resource World

6. RESULTS AND DISCUSSION

The result and discussion in the Research paper in all values in practically analysis Active distribution network (ADNs), Operation Flexibility in the transmission systems, and the Power storage Systems, and Distribution Energy Recourse

(A) Active Distribution Networks (ADNs)

Table: 1 Distribution Transmission Parameters and values is optioned

Sr	260 - 315	KWA
Po	210 - 576	Watt
Pc	3050 - 3825	Watt
Us	4 - 9%	%

(B) Operation Energy Transmission Systems

According to the hub of an International Energy Agency, the Distribution of a power system refers to "the extent to which a electric Transmission power system can modify electricity production or consumption in response to variability, expected or otherwise".

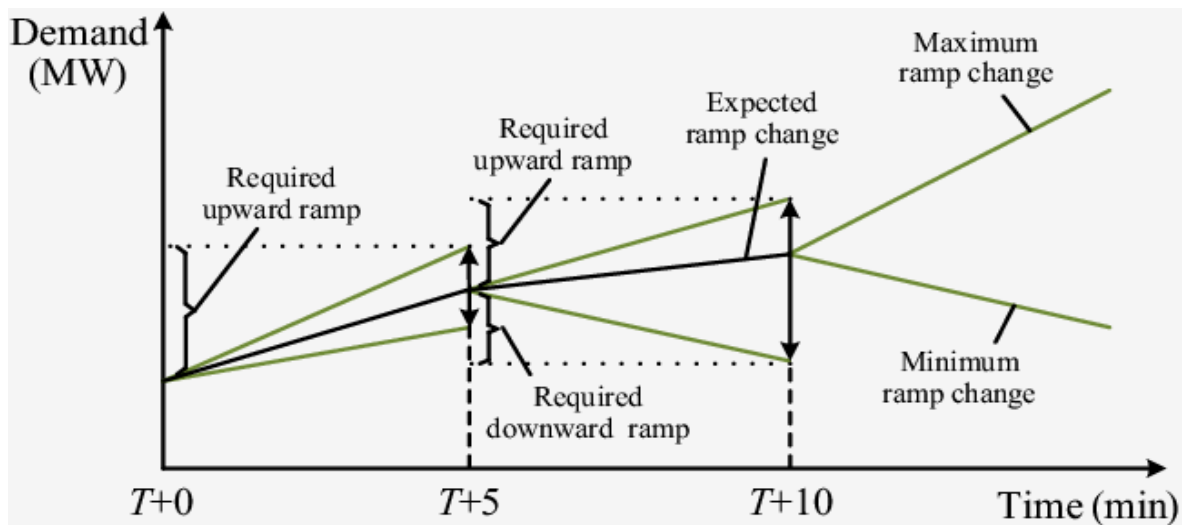


Figure: 4. Operation Energy Transmission Systems

Flexibility services are where a Distribution Network Operator (DNO), in the graph between demands of power is increase and time is also increase like us, pays a third party to operate assets in a way that's beneficial to our network.

(C) Power Storage Systems (PSS)

These are energy storage mechanical devices fuel cells in specific energy is storage time is (5 to 2.5 hr), storage batteries in energy (15 to

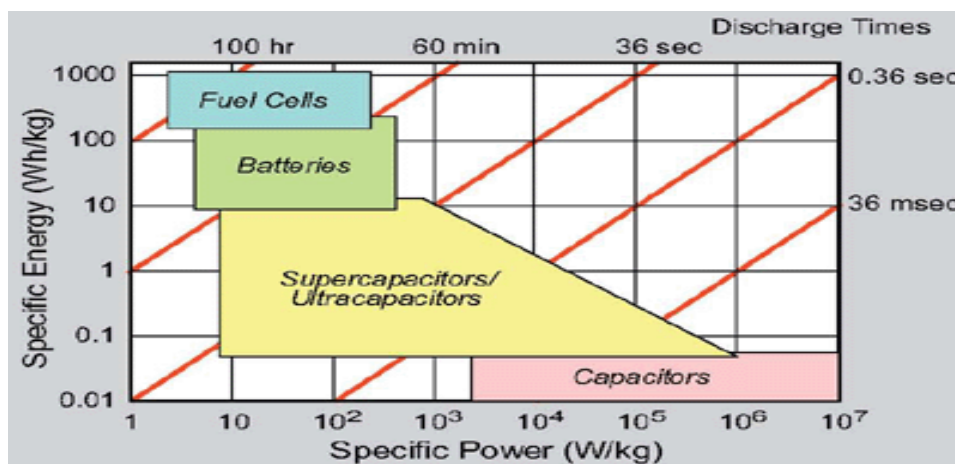


Figure: 4. Energy Storage System (ESS)

Table:3. Power Storage Systems

Techniques	Power	Efficiency
Super Capacitors	0.8MW - 1 MW	85 – 95%
Flywheel	4KW – 92MW	80 – 96%
Pumped Hydro	100MW- 2GW	70 – 80%
SMES	165KW -100MW	80 -94%

(D) Distributions Energy Resource (DER)

The Electric Distributed energy resources are small, and medium electric energy transmission line and dependence on the country energy marketing modular, energy generation and storage technologies that provide electric capacity or energy where you need it. DER systems may be defending the transmission of power system in the Indian either connected to the local electric power grid or isolated from the grid in stand-alone applications.

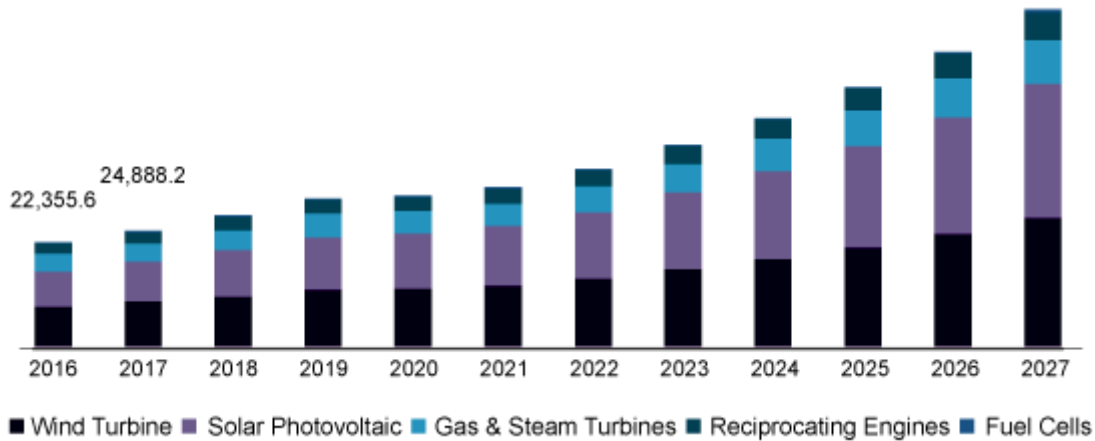


Figure: 5. Distributions Energy Resource (DER)

The distribution of energy in the Application of transmission line wire and closed cable and open cable Closed cable is efficiency is very high (90 – 95%) transfer of electric energy in the villages, industries, and medium level of plants in application.

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CONCLUSION:

This is the analytical research and compressions of the Quantified Analysis method for operational Flexibility in the electric power systems is used in transportations electric vehicles and industrial, and factories plants and other sectors. It is the main Applications of Health Sectors, Medical industries and colleges and Education sectors, small industries workshops in applications in the villages areas.

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