

Global Electric Double-layer Capacitor (EDLC) Market 2023

<https://marketpublishers.com/r/G1BD544C5F44EN.html>

Date: October 2023

Pages: 27

Price: US\$ 1,875.00 (Single User License)

ID: G1BD544C5F44EN

Abstracts

Description

The global electric double-layer capacitor (EDLC) market is forecast to reach USD 1.21 billion by 2029, exhibiting a CAGR of 10.0% during the 2023-2029 period. EDLCs possess high capacitance values and rapid charge/discharge capabilities, making them suitable across a wide range of applications demanding high power density and cycling stability.

Major factors driving EDLC market growth include the development of graphene and carbon nanotube-based EDLCs with superior performance as well as stringent government regulations aimed at curbing carbon emissions globally. EDLCs are being adopted as substitutes for batteries in automotive, grid infrastructure, and IT systems, owing to key advantages such as safety, rapid charging, long service life, low maintenance needs, and compact size.

Researchers are focused on developing more affordable and eco-friendly EDLC solutions to reduce production costs and dependency on expensive or critical raw materials. However, the price difference compared to lithium-ion batteries remains a restraint, limiting uptake. The COVID-19 pandemic temporarily affected manufacturing, particularly in Asia-Pacific. However, industries remain optimistic about progressing EDLC commercialization post-pandemic.

Market Segmentation

The market is segmented based on various factors, including end user and geography.

Segmentation by End User

Consumer Electronics

Energy and Utilities %li%Grid Applications, Wind and Others

Industrial

Automotive/Transportation %li%Bus and Truck, Rail and Tram, 48V Mild Hybrid Car, Micro Hybrids and Other Cars, Heavy Vehicles

Segmentation by Geography

United States

Europe

China

Japan

Korea and Rest of Asia

Rest of the World

Electric double-layer capacitors (EDLCs) have witnessed significant growth opportunities in renewable energy applications. The increasing global focus on renewable energy sources represents a major prospect for EDLC manufacturers. The Asia-Pacific region is at the forefront of renewable energy consumption and materials innovation, driving advances in EDLCs.

EDLCs offer higher power density compared to batteries along with greater energy density versus standard capacitors. With inherent advantages like high efficiency, robust charge/discharge capabilities, and wide operating temperature range, EDLCs are gaining traction in renewable power, transportation electrification, and energy management systems. For instance, in wind farms, a hybrid energy storage system combining a battery and EDLC allows for power dispatchability and extends the battery lifespan through smoothing power fluctuations.

Government initiatives and policies aimed at promoting renewable energy adoption, electric mobility, and modernizing power infrastructure will further accelerate EDLC uptake. The superior power handling traits of EDLCs make them uniquely suited to complement renewable energy intermittency, electric vehicle fast charging, frequency regulation, and grid stability applications.

Competitive Landscape

The EDLC market is fragmented, and market players are using strategies like partnerships, mergers, innovations, investments, and acquisitions to enhance their product offerings and competitive advantage. Key companies profiled in this report are Beijing HCC Energy Tech. Co. Ltd, CAP-XX Limited, Chengdu ZTech Polymer Material Co. Ltd., Cornell Dubilier Electronics Inc., Eaton Corporation plc, Ioxus Inc., Jinzhou Kaimei Power Co. Ltd. (KAM), Kyocera Corporation, Lelon Electronics Corp., Liaoning Brother Electronics Technology Co. Ltd., LS Mtron Co. Ltd., Maxwell Technologies Inc., Nantong Jianghai capacitor Co. Ltd., Nippon Chemi-Con Corporation, Panasonic Corporation, Seattle Electronics Mfg Co. Ltd., Seiko Instruments Inc. (SII), Shanghai Aowei Technology Development Co. Ltd., Shanghai Green Tech Co. Ltd. (GTCAP), Shanghai Pluspark Electronics Co. Ltd., Shenzhen Topmay Electronic Co. Ltd., Skeleton Technologies Inc., Supreme Power Solutions Co. Ltd., Taiyo Yuden Co. Ltd., Tavrma Canada Ltd., TDK Corporation, TOKIN Corporation, Vishay Intertechnology Inc., W?rth Elektronik eiSos GmbH & Co. KG, and Yunasko Ltd.

Recent Industry Developments

In March 2023, The Government of Canada announced renewed support to accelerate the growth of the electronic systems industry. Quebec's Electronic Systems Industry Cluster received approximately USD 450,000 funding from Canada Economic Development (CED) to enhance industry growth and increase business productivity.

TDK Corporation introduced the PhaseCapEnergy Plus in May 2022. It includes two new series of EPCOS PFC capacitors with a lifetime of up to 240,000 hours in temperature class -40/D. The capacitors have IP20 touch-proof terminals, pre-mounted ceramic-based discharge resistors, and a capacity of up to 15,000 switching operations per year, double the amount of previous types.

Why Buy This Report?

Get a detailed picture of the Global Electric Double-layer Capacitor (EDLC) Market

Identify segments/areas to invest in over the forecast period in the Global Electric Double-layer Capacitor (EDLC) Market

Understand the competitive environment, the market's leading players

The market estimate for ease of analysis across scenarios in Excel format

Strategy consulting and research support for three months

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Contents

PART 1. INTRODUCTION

- 1.1 Description
- 1.2 Objectives of The Study
- 1.3 Market Segment
- 1.4 Years Considered for The Report
- 1.5 Currency
- 1.6 Key Target Audience

PART 2. RESEARCH METHODOLOGY

PART 3. EXECUTIVE SUMMARY

PART 4. MARKET OVERVIEW

PART 5. GLOBAL ELECTRIC DOUBLE-LAYER CAPACITOR (EDLC) MARKET BY END USER

- 5.1 Automotive/transportation
- 5.2 Consumer electronics
- 5.3 Energy and utilities
- 5.4 Industrial

PART 6. GLOBAL ELECTRIC DOUBLE-LAYER CAPACITOR (EDLC) MARKET BY GEOGRAPHY

- 6.1 United States
- 6.2 Europe
- 6.3 China
- 6.4 Japan
- 6.5 Korea and Rest of Asia
- 6.6 Rest of the World

PART 7. COMPANY PROFILES

- 7.1 Beijing HCC Energy Tech. Co. Ltd
- 7.2 CAP-XX Limited
- 7.3 Chengdu ZTech Polymer Material Co., Ltd.
- 7.4 Cornell Dubilier Electronics, Inc.
- 7.5 Eaton Corporation plc
- 7.6 Ioxus, Inc.
- 7.7 Jinzhou Kaimei Power Co., Ltd. (KAM)
- 7.8 Kyocera Corporation
- 7.9 Lelon Electronics Corp.
- 7.10 Liaoning Brother Electronics Technology Co., Ltd.
- 7.11 LS Mtron Co., Ltd.
- 7.12 Maxwell Technologies Inc.
- 7.13 Nantong Jianghai capacitor Co., Ltd.
- 7.14 Nippon Chemi-Con Corporation
- 7.15 Panasonic Corporation
- 7.16 Seattle Electronics Mfg Co., Ltd.
- 7.17 Seiko Instruments Inc. (SII)
- 7.18 Shanghai Aowei Technology Development Co., Ltd.
- 7.19 Shanghai Green Tech Co., Ltd. (GTCAP)
- 7.20 Shanghai Pluspark Electronics Co., Ltd.
- 7.21 Shenzhen Topmay Electronic Co., Ltd.
- 7.22 Skeleton Technologies Inc.
- 7.23 Supreme Power Solutions Co., Ltd.
- 7.24 Taiyo Yuden Co., Ltd.
- 7.25 Tavrma Canada Ltd.
- 7.26 TDK Corporation
- 7.27 TOKIN Corporation
- 7.28 Vishay Intertechnology, Inc.
- 7.29 W?rth Elektronik eiSos GmbH & Co. KG
- 7.30 Yunasko Ltd.

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