

# Analysis of ESS Business - Flow Battery Tech. & Market

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## Abstracts

Flow Battery, the new solution for ESS market

An ESS (Energy Storage System) is a device that stores electric power energy that is delivered from the power plant, transmitted to the substation and distributed to the end consumer. Pumped storage power plant and UPS (Uninterruptible Power Supply) are typical energy storage systems which were widely used from the past. However the application market of ESS is much more diverse and can be classified into 19 areas. Among many ESS technologies, flow battery technology shows high potential and is expected to be applied in various application markets in the future.

This report contains broad range of topics related to flow battery, one of the most influential technology of ESS. The report looks into the history of flow battery and various redox couples and describes component parts of the battery.

In addition, the report includes patent trend analysis of flow battery by country, company and research institution. The trend of major flow battery research institution and companies of each country are covered in the report

The report mainly focuses on the market of the flow battery. About 85 flow batteries (small-scale batteries excluded) were installed in the world until 2012 which is above 343MWh in capacity. The installation market for flow battery is becoming more active in recent years. Flow batteries are mainly used for load leveling, renewable capacity firming, micro grid system, UPS and frequency regulation. The status of the global installation market of flow battery has been examined and analyzed by country, redox couple technology and by year and predictions on market share of flow battery were made with consideration to other ESS technologies. In 2012 the flow battery occupied

approximately 0.5% of the ESS market but is expected to increase to 25% by 2020.

**Strength of the Report:**

Covers all contents on flow battery history, technologies, component parts and trends of global research institutions and companies.

Provides trend of flow battery through patent analysis.

Provides information on global flow battery installation up to 2012.

Analyzes factors affecting the flow battery market and provides market prediction.

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