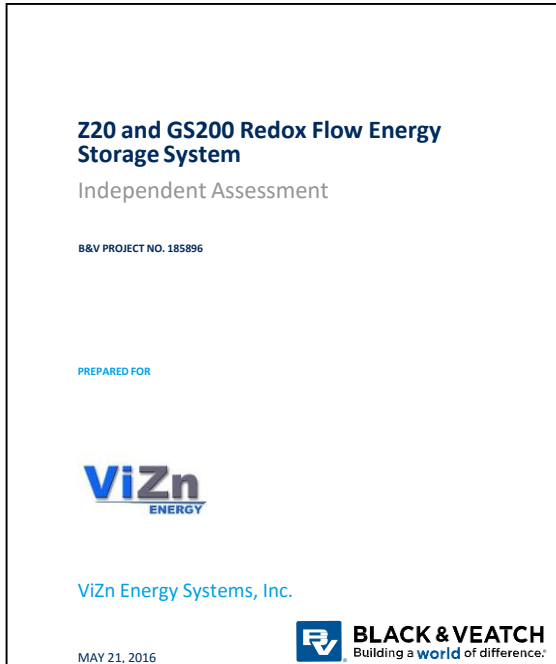


# INDEPENDENT ENGINEERING ANALYSIS



# Independent Engineering Assessment of ViZn Energy



## Process:

- Steps
  - Review ViZn technology claims
  - Validate ViZn engineering capabilities
  - Assess manufacturing readiness
  - Review quality procedures
- Resources
  - 2 B&V onsite assessment staff, PhD level with various corporate resources
  - Over 30 ViZn and Jabil engineering - over 600 man hours
  - Duration of assessment, 35 weeks, September 2015 through May 2016
- Location of eye witness assessments
  - ViZn Energy in Montana
  - Jabil manufacturing in Florida
- Main objectives
  - The batteries' designs
  - The ability to meet the technical specifications stated by ViZn.
  - ViZn's ability to consistently deliver the batteries with quality
  - ViZn's technical and performance-related specifications.
  - The manufacturing quality of the batteries.
- Resulting documents reviewed
  - 4 categories of company, performance and reliability, engineering design and manufacturing including over 600 document reviews
  - Comprehensive 43 page assessment report finalized in June, 2016

# Independent Engineering Assessment of ViZn Energy



Black and Veatch is a world leading independent engineering analysis firm in critical infrastructure and energy services. A \$3B global partner in engineering, consulting and construction specializing in infrastructure development in the energy market.

Black and Veatch provided a third party review of the design, performance, and manufacturing quality of ViZn flow batteries and company capabilities.

- Company** “Key differentiators from other flow battery technologies are safety of the electrolytes, abundance of core raw materials, and a 20-year expected system”
- Design** “ViZn improved upon the original technology to achieve higher electric charge capacity, power capacity, and improved reliability.”
- Manufacturing** “Black & Veatch believes that Jabil’s vendor qualification and monitoring process is well established and should be able to ensure quality materials and components for ViZn’s products.”
- Leadership** “Black & Veatch believes that ViZn’s senior management team has experience in the manufacturing commercialization of novel products in the energy industry and appears to have the skills required to manage ViZn.”
- Performance** “Black & Veatch believes that the ViZn batteries outperform systems with lithium based chemistries at high ambient temperatures due to the fact that the ViZn ESS requires a smaller HVAC load.”

