



Rechargeable Zinc-Air Batteries

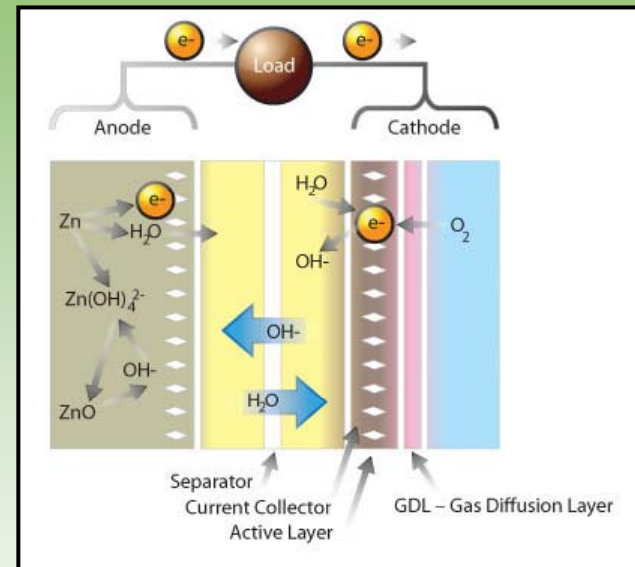
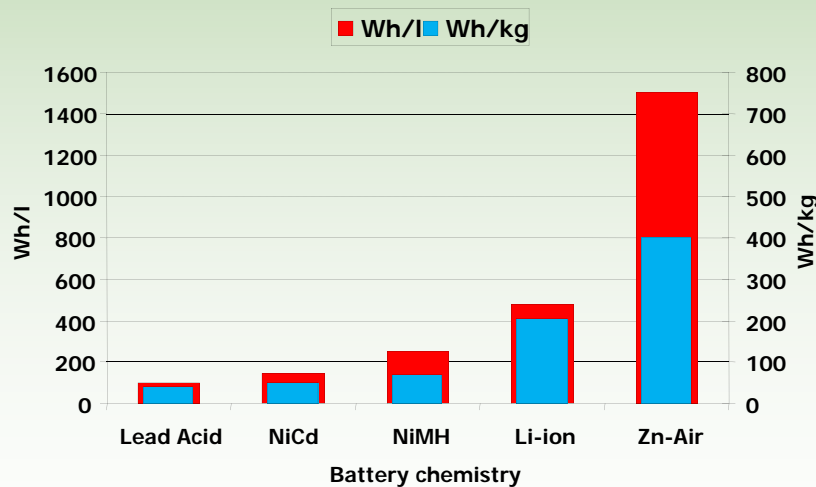
History and Intro

- 6 years of fundamental research at SINTEF zinc-air battery
- Norwegian company founded 2004, moved to Switzerland 2005
- New CEO 2008; new SMT, Chairman and investor (RWE) 2009
- Strategy shift to flow batteries and move to Germany and US 2010
- Awarded €23.5/\$31.5 million in competitive soft funding 2010-12
- VC funded €26/\$34.5 million through series B funding 2011



Technology Summary

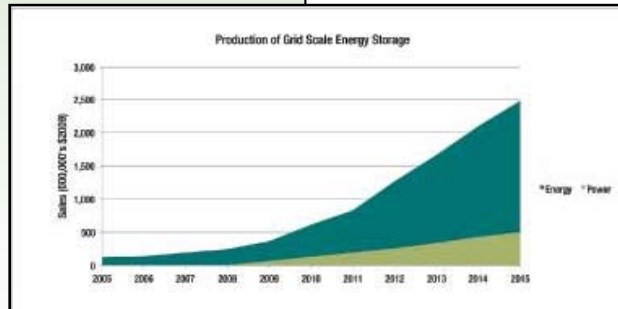
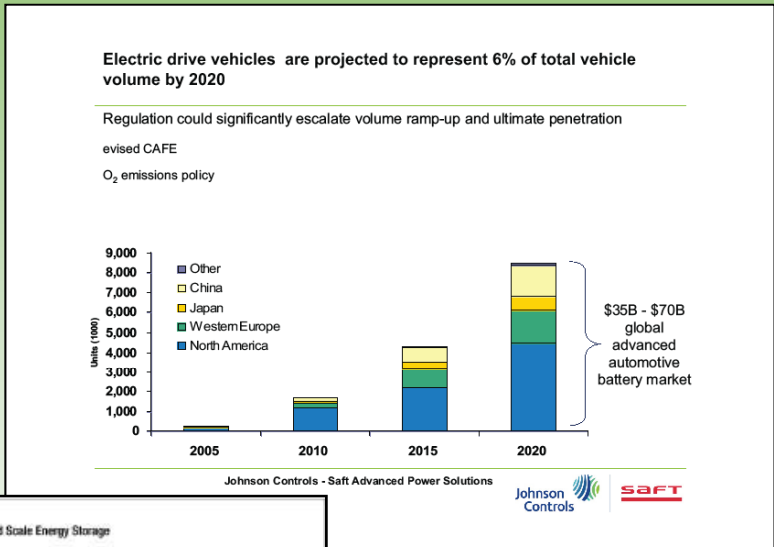
- Highest energy density:
 - Energy density 2-3 times Li-ion
- Completely safe behaviour:
 - Self-limiting reaction, non-flammable
- Environmentally benign:
 - Non-toxic materials
- Sustainable and cost-effective:
 - Zn is globally abundant & cost-effective



Product and Market Focus

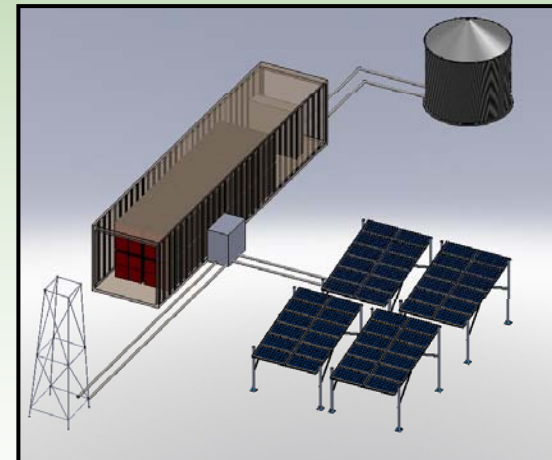
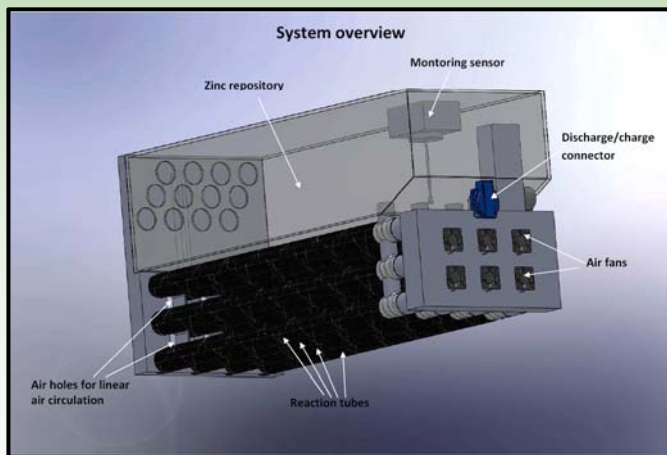
Platform	Prototype	Production Target	Cost in production
EV Range Extender	3.5kW / 20kWh	15-30kW / 50-80kWh	< US\$200/kWh
Energy Storage Platform (Distributed and Bulk)	5kW / 20kWh	5-40kW / 20 -100kWh	< US\$100/kWh

- Development Phase 2012-14
- Pilot & Demo Phase 2014-15
- Commercialization Phase 2015-16



Zinc-Air Flow Battery

- Separates energy storage from energy conversion
- Power and energy independently scaled and optimised
- Zinc anode in slurry form, flows through cathode reaction tubes or plates
- Zinc slurry formulations customizable for application design
- Modular and scalable from kilowatts to megawatts
- Low cost materials



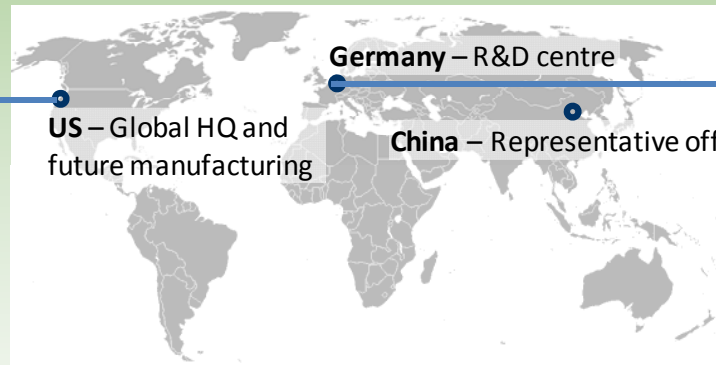
Flow Battery Design Advantages

ReVolt is taking a different approach...

- ***Unwanted Gassing of electrodes*** – Eliminated by design
- ***Dendrite growth of anode*** – Zinc suspended in slurry
- ***Dry out once activated*** – Tank is sealed, system levels monitored
- ***Leakage*** - Eliminated by design
- ***CO₂*** – Suppressed and managed, new materials
- ***Cost*** - Simple design, low cost, easily serviced

Financial Awards

Winner of several competitive grants and related funding in the US and Germany 2010 - 2012... €23.5 / \$31.5 million



Management Team

Experienced management team scaling several battery technologies...

...100+ years of industry experience at Valence, Varta, Polystor, Tianjin Lishen, Solicore, ICC, Gould Electronics, Sion Power, Lithium Energetics, Powerdex, Union Carbide...



James P. McDougall, CEO and Managing Director



Dr. Trygve Burchardt, Founder and CSO



Wade Guindy, COO and EVP of Technology



Harvey Mancey, EVP of Business Development and General Manager of European Operations



Thomas Gebauer, CFO



Dr. Tibor Kalnoki-Kis, VP of R&D



Chairman and Advisory Board



John Searle, CEO of Saft Batteries
Chairman of the Board ReVolt Technology



Dr. Richard Doisneau, Former CTO of Saft Batteries



**Helmut Waltersdorfer, Former BMW GM for Power Train Innovation,
Senior Internal Consultant for BMWi program**



**J. Norman Allen, Former President of New
Products and Technology, Duracell**



Dave Dorheim, Former, Founder and CEO of AER



Business Operations

***Positioned
Strategically in
the US and
Germany...***



- US, Portland
- Headcount: 17 in 2011, 22 in 2012
- World HQ and future manufacturing

- Dortmund, Germany
- Headcount : 7 in 2011 and 25 in 2012
- EU HQ and R&D centre



Industry Awards

