



EU Automotive Summit

A realistic and sustainable route to
vehicle electrification

Introduction



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- Company: LiTHIUM BALANCE
- Position: Marketing Manager
- Background:
 - Design & Dev. Automotive
 - Measurement & Instrumentation technology
 - Product Management and Marketing



This is important work that we do, power and energy sources have often defined the age in which we live. This could be the dawn of a new era...

LiTHIUM BALANCE



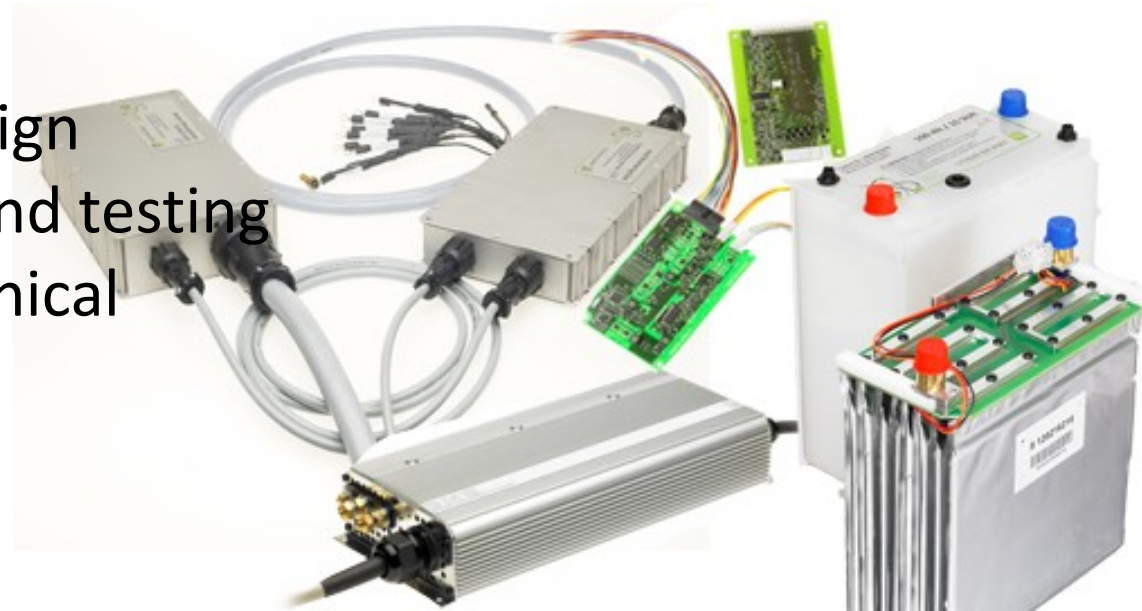
Products

- Battery Management System
- Connection accessories
- Switchbox (BDU) solutions
- Chargers

A Front row seat in the
electrification of mobility
saga

Services

- Electrical system design
- System integration and testing
- Installation and technical assistance



First law of commerce (or it should be)



- Where there is a commercially realisable demand in a free market – it will be met

Governments need to focus on creating real and sustainable demand for electric vehicles

Learning old lessons



- **Commerce is driven by demand**
- Utility or perceived value create demand
- Novelty value won't create mass market demand
- **The revolutionary product does not conquer the mass market it is the evolution of that product**
- Openness is good
- Early adopters tolerate only so much...
- **First impressions last**
- History is littered with good products ahead of their time
- **Commercial entities are in it for the money**

After the Revolution



- Apple iPhone1 sales: 270,000 in the 36 hours
- Apple iPhone 4 sales: 1.7 million in three days
 - No matter the marketing it takes time to gain market acceptance and to iron out the bugs
- Introduce the product in the markets where it gives most benefit

It takes time,
technologies need to
mature and prices
come down



Electric Personal Transport

A short comparison C segment vehicle



	Electric Vehicle	ICE Vehicle
Basic Cost	€ 22 k approx	€22k
Battery pack cost	€12-13k	0
Price/km	5cents (25cents/kwh)	5-10 cents (Diesel)
Taxation	0	€400/year
Effective Range	120km	500km (60l tank)
Refuelling time	7-8 hours	5 mins
Cruising speed	90km/h	130km/h
Driving experience	V. Good	V.Good

Joe Public and the electric car



- It's expensive
- The competition for electric cars is not only new cars it's all cars
Range anxiety is real
- Realworld performance is too inflexible
- The universal charging infrastructure is not there yet
- Law of diminishing returns on bigger battery packs

Where electric vehicles currently make sense



- Short range with significant starting and stopping
- Operational costs **more significant than** purchase costs
- As part of a mixed fleet
- Preferably urban
- Can also be within large facilities, military bases, airports, factories etc.

Electric Commercial Transport

A short comparison



	Electric Vehicle	ICE Vehicle
Basic Cost	€ 3x k approx	€ x k
Price/km	5cents	7 cents (Diesel)
Taxation	0	€400/year
Effective Range	120km	500km (60l tank)
Refuelling time	7-8 hours	5 mins
Cruising speed	90km/h	130km/h
Driving experience	V. Good especially in traffic and stop start applications	Elevated noise and vibration levels

Examples of applications



- 8.5 ton delivery vehicles from Smiths and AGV
- Numerous Light commercial vans from
 - Enerblu
 - Microvett
 - AGV
 - Smiths



What governments can do to make a difference

- Create awareness among potential users
- Support leasing schemes for electric vehicles
- Encourage industry to drive electric by providing real tax breaks on the operation of electric vehicles
- Shift the cost burden to ICE vehicles
- Accept that range extended BEVs are a good pragmatic solution in the medium term