

Fuel cell portfolio strategy from compact car to heavy duty long-haul

CLIENT: AUTOMOTIVE OEM

BACKGROUND: Client is developing fuel cell powertrains and wanted to elaborate modularity benefits across the application portfolio of the entire OEM group

DELIVERABLES

- Defined use cases for fuel cell powertrains and definition of top-level function requirements
- Deduction of technical requirements and specifications
- Development of cost scaling models for major fuel cell powertrain components
 - Scaling by production volume
 - Scaling by performance criteria
- Portfolio analysis and modularity investigation to identify optimal portfolio strategy
- Yearly production cost savings of 30 million
- Equals over 4% over total OEM portfolio

EUR 30 MILLION YEARLY COST SAVINGS

	A-Car	B-SUV	C-SUV	Van	Bus	HD Truck
HV bus voltage	Voltage range 1			Voltage range 2		
FC cells	Cell size 1			Cell size 2		
FC stacks	...	...	...	...	...	...
Battery cells	Battery cell 1			Battery cell 2		
Battery packs	...	...	...	...	...	...
DC/DC topology ¹	Topology 1	Topology 2	Topology 1	Topology 2	Topology 1	
DC/DC FC side boards	Current class 1		Current class 2	Current class 1	Current class 3	
DC/DC battery side boards	-	Current class 1	-	Current class 2	Current class 3	Current class 4
Tank configuration	2 x A	2 x B & C	2 x B & C	4 x A	5 x D	9 x D
Tank size	...	...	...	...	...	...
CEM unit ²	...	...	...	...	...	...
Yearly cost (million EUR)	...	...	...	...	...	...