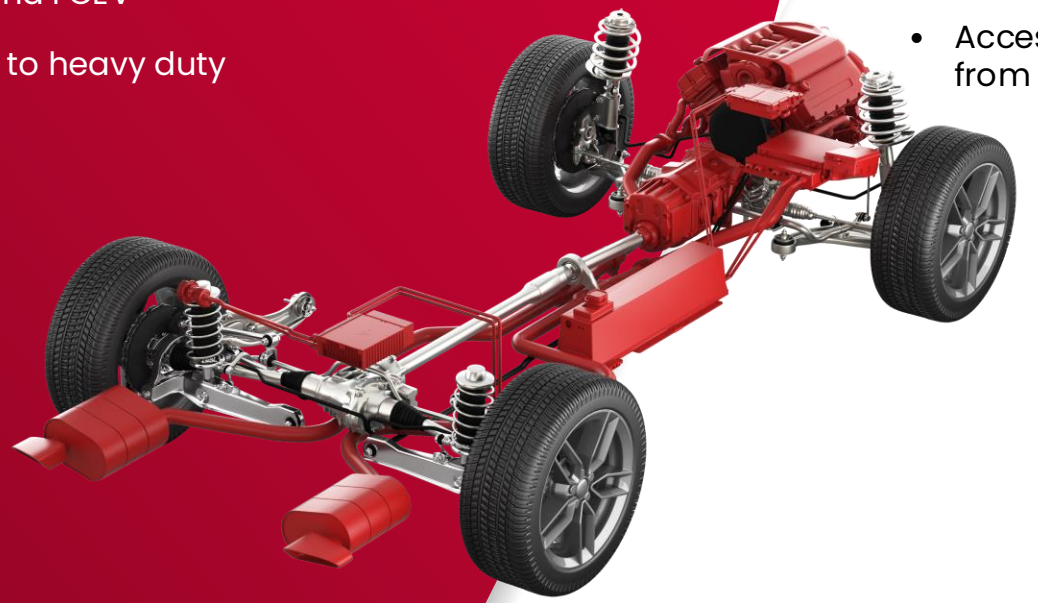
FEV Signature Solutions
Powertrain pre-dimensioning tool

Our tool supports you to choose the right powertrain topology for your specific purpose

FEV offers

- Component pre-dimensioning directly from performance targets within seconds
- High level vehicle performance evaluation
- Suitability for ICE, xHEV, BEV, and FCEV
- Applicable for micro mobility to heavy duty
- Tool license available



Why FEV

- Tool is continuously extended and updated
- Extensive experience in powertrain concept development
- Additional services as modification or extension
- Access to FEV database with > 800 vehicles from benchmarking and development

Reference projects

FEV PRE-DIMENSIONING TOOL

- Series development
- Concept study
- Conference paper

Life cycle-based powertrain concept development in a sustainable world

Asian OEM (High level powertrain dimensioning)

Asian OEM (Systems engineering)

European OEM (Hybrid component sizing)

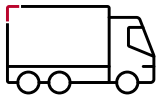
Engine Manufacturer (ICE technology assessment)

European OEM (High level powertrain dimensioning)

Asian OEM (High level powertrain dimensioning)

European Tier 1 Supplier (High level powertrain dimensioning)

European Energy company (High level powertrain dimensioning)



Fuel Cell System for Heavy Duty Trucks

Asian OEM (Hybrid component sizing)

Reduction of production platforms for future passenger cars

Powertrain layout & achievement of CO2 fleet Targets

Complex requirements and multitude of feasible propulsion systems necessitate appropriate design methods and tools

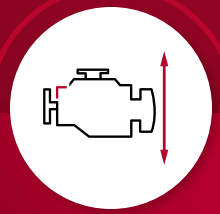
PRE-DIMENSIONING TOOL AS PART OF SYSTEMS ENGINEERING PROCESS

01

Stakeholder needs

02

Requirements management



03

Component pre-dimensioning

04

System architecture & design

05

Integration & implementation

06

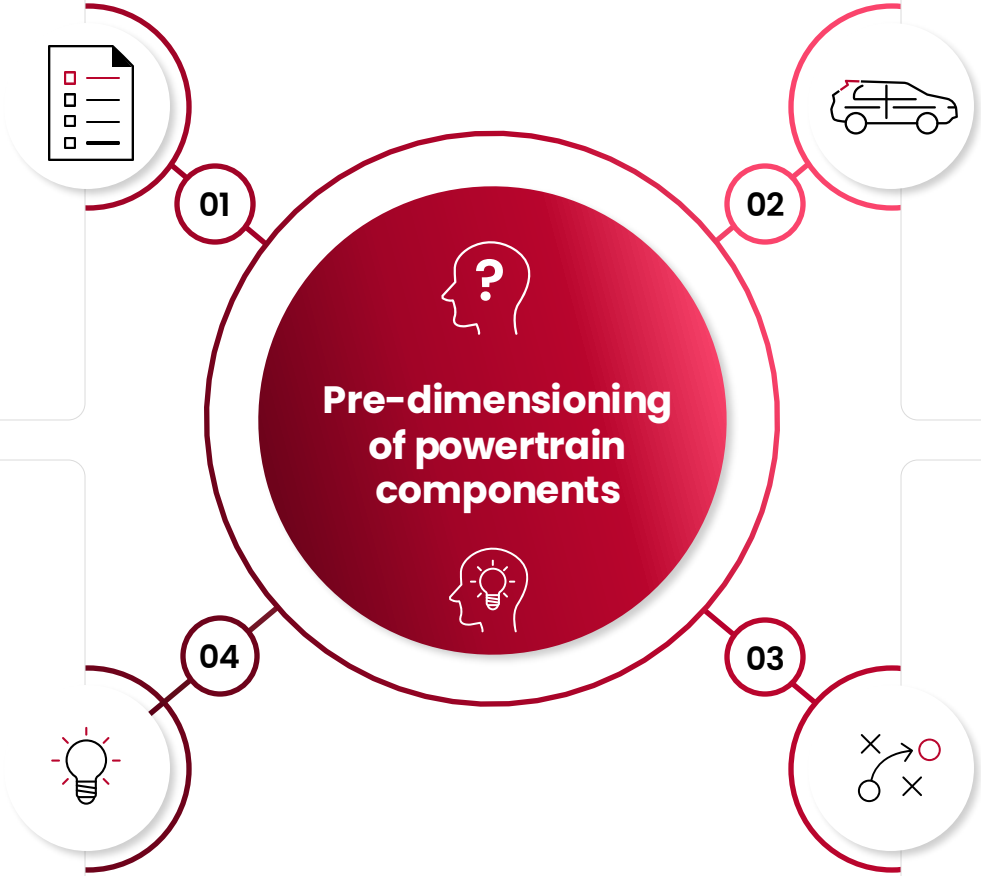
Verification & validation

FEV's pre-dimensioning tool derives component dimensions from performance targets and vehicle specs for various powertrain topologies

SIMPLIFIED POWERTRAIN SIMULATION TO GAIN COMPONENT DIMENSIONS WITHIN SECONDS

Test case definition

- Acceleration & elasticity scenarios
- Gradeability maneuvers
- Vehicle weight variations (payload, trailer)
- Test case definition for various operation modes (e-drive, hybrid drive, …)



Vehicle parameter definition & drivetrain layout

- Powertrain topology def.
- Vehicle resistance & geometry definition
- Baseline component & transmission definition
- Average efficiency definition

Check of Target fulfillment

- Final powertrain component definition
- Test case target fulfillment & worst case

Component pre-dimensioning

- Iterative process: Variation of component sizes till all target scenarios are achieved or overfulfilled
- Consideration of performance limitations
- Visualization of results

Get in touch with us for further information

www.fev.com/en/signature-solutions