

The IFPEN Transports-Energie Carnot Institute is a leading research and innovation player in the field of sustainable mobility. It provides its industrial partners with innovative and competitive products and services in three areas: electric mobility, connected mobility and mobility with a low environmental impact. Within IFP Energies nouvelles, it addresses current mobility challenges: the evolution of usages hinged around digitalization, improved energy efficiency, energy diversification and pollution reduction.

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## LET'S INNOVATE TOGETHER FOR A MORE SUSTAINABLE MOBILITY

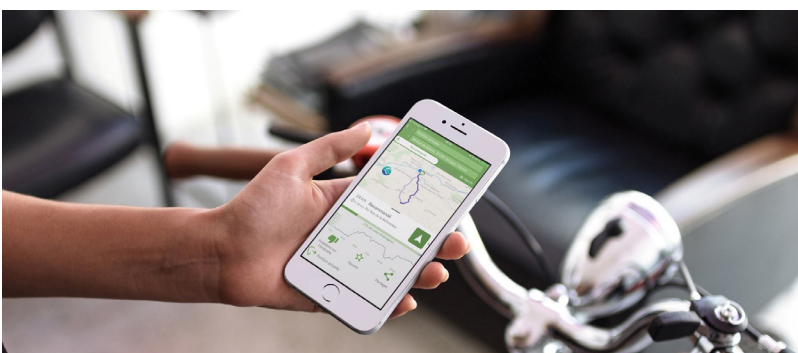
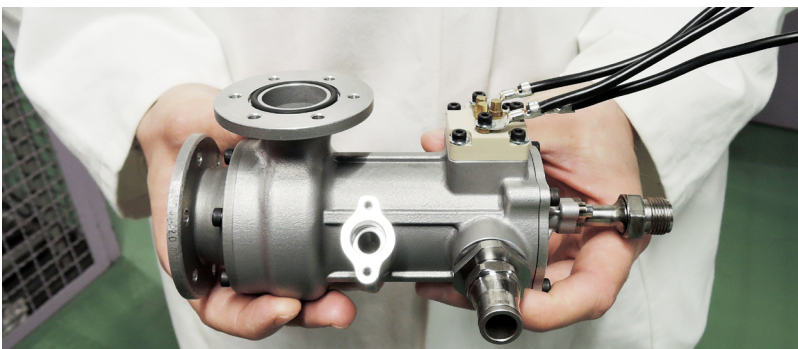
### Innovate

**Innovative solutions addressing market needs:**

- Electric powertrain systems for optimal energy efficiency of vehicles
- Web services to reduce the environmental footprint associated with mobility and improve air quality
- IC engine systems incorporating low-carbon fuels in order to reduce the carbon footprint and pollutant emissions
- Mobile or stationary systems for energy production and storage and thermal energy recovery for transport or low-power facilities

**High-performance experimental resources and digital tools resulting in innovations with reduced costs and development times**

**A proactive industrial protection policy**

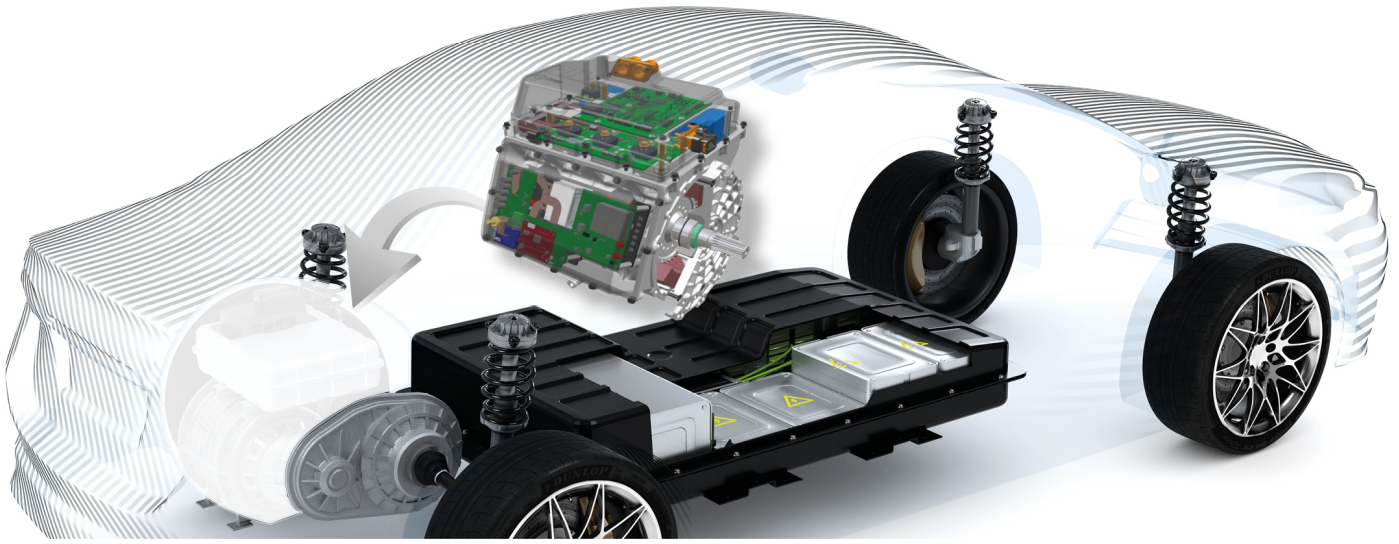


### Target markets

- **Automobile including trucks and Off-road**
- **Urban mobility**
- **Aviation**
- **Energy**
- **Waterway, maritime**
- **Rail**

### Collaborate

- **Close ties with industry:** from start-ups, micro-companies, SMEs and intermediate-sized companies to major French and international industrial groups
- **A strong commitment within competitiveness clusters** (NextMove, CARA, ASTech, etc.)
- **Pooled and targeted action within the context of Carnot "industrial sector" projects:** coordinator of Carnauto for the automobile sector and partner of Aircar for the aviation sector
- **Synergy with networks of academic partners** and R&D laboratories with an international influence
- **Active participation in European bodies** representing research and industry (EARPA, ERTRAC, EGVA, POLIS)



## Transfer

Support for industrial sectors, covering a very broad range of technological readiness levels (TRL 2 to 9)

Transfer of our R&D results via:

- joint product development with licensing out operations
- strategic partnerships
- collaborative research contracts

An innovation support policy, aimed particularly at micro-companies, SMEs and intermediate-sized companies

## Cutting-edge expertise and skills

- 3D modeling, advanced diagnostics and understanding of combustion
- New IC engines and vehicle integration
- Engine/fuel compatibility and alternative fuels
- Pollutant analysis and after-treatment systems
- New electric motors and electronic control and power systems
- Electricity storage and production systems
- Powertrain and vehicle system simulation
- Control strategies and real-time simulation
- Driving assistance and vehicle fleet management
- Signal processing
- Optimization algorithms, data sciences



## Key figures

Permanent staff  
(full-time equivalent): 279  
PhD Students: 31

Partnership incomes  
with industry: €15M  
Global budget: €38,5M

## Contacts

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