

THE REGIONAL INNOVATION SYSTEM

Accelerating competitiveness together



per una crescita intelligente,
sostenibile ed inclusiva

www.regione.piemonte.it/europa2020

INIZIATIVA CO-FINANZIATA CON FESR



MEGATRENDS & ENABLING FACTORS

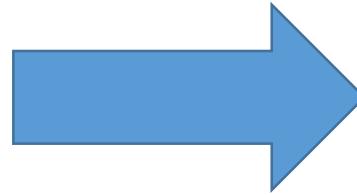
S3 – Smart Specialization Strategy: the evolution

2014-2020

INNOVATION CROSS COMPONENTS

2021-2027

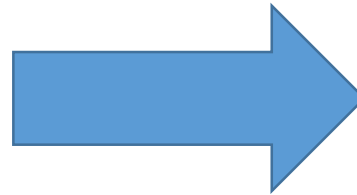
Smart
Resource Efficiency



Digital transition
Ecological transition
Social and territorial impact

INNOVATION RELEVANT SYSTEMS

1 Aerospace
2 Automotive
3 Green Chemistry
4 Mechatronics
5 *Made In* (textile, agrifood)
6 Health



1 Aerospace
2 Mobility
3 Green Technologies
4 Advanced manufacturing
5 Food
6 Health

Mobility

- **Technologies and components for alternative propulsion**
- **Infrastructure development for EPV based mobility**
- **Technologies for connectivity and for data and infrastructure management (smart and connected transport)**
- Management and optimization of sustainable, safe, intermodal, shared and alternative mobility
- The challenge of autonomous and assisted driving
- **Design and implementation of new mobility systems and solutions for people and goods**
- **Solutions for the improvement of logistic of goods**
- Solutions for Urban Air Mobility

Green Technologies

- Green chemistry processes and products
- Urban services and utilities
- Resilient cities and territories
- **Clean Energy** / Renewable Energy Communities (RES), **hydrogen value chain**, Technologies CCUS
- Green materials and from recovery

BEST PRACTICES & TECHNOLOGIES

Swap4Truck

Feasibility Study

Progetto finanziato nell'ambito del POR FESR 2014-2020 del Piemonte
Asse I – Azione I.1b.1.2 Bando PASS Linea 2 Studi di Fattibilità Tecnica

Why Electric Vehicles?

Because the future is asking for it?

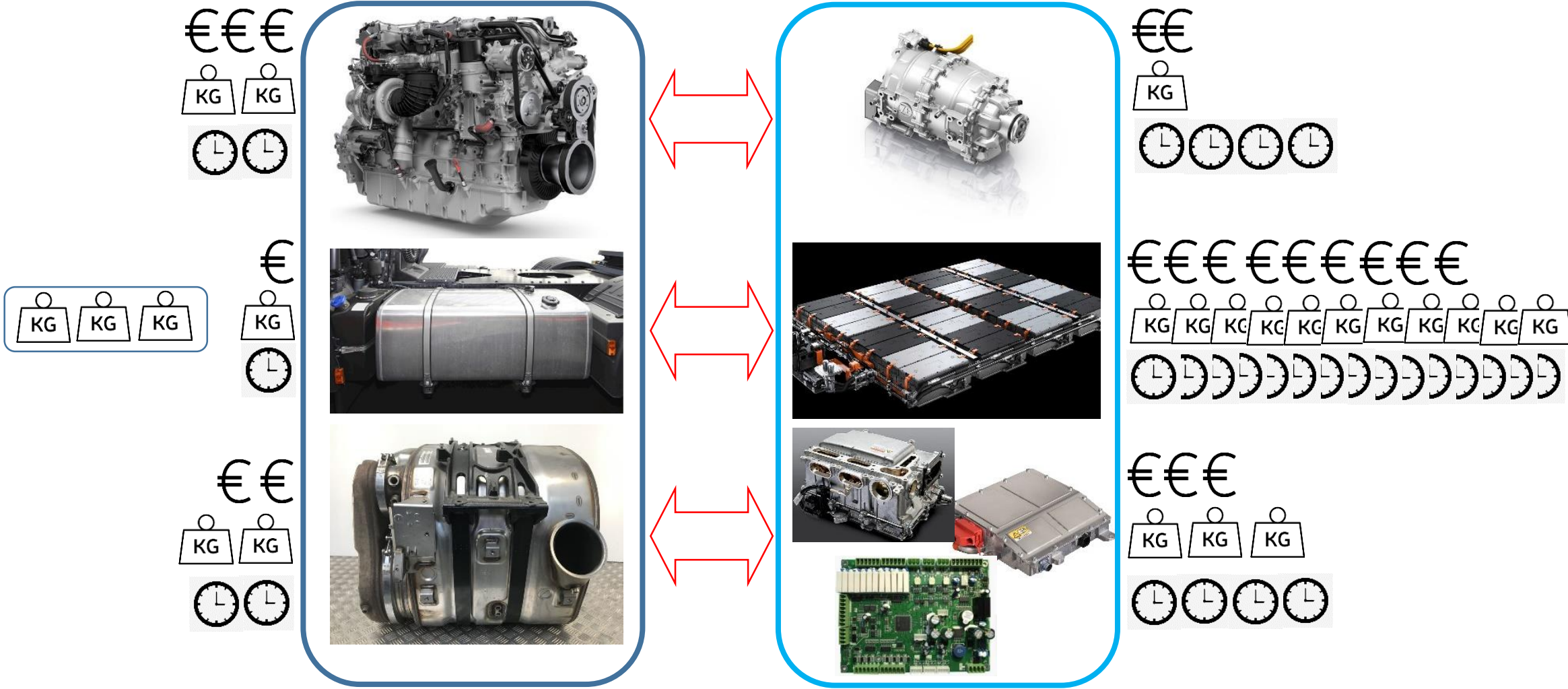
Are we close to the ecological disaster?

Climate change?



Or it will be the next years' business?

Comparison of technologies



New concept?



NO

Mercedes was among the precursors in the development of alternative technologies to the internal combustion.

1972 – Mercedes-Benz LE 306 Electro-Transporter

In the close past....

Better place - Israel 2008-2014...



...a 850M\$ disaster...

And now...



**NIO Sets Up Battery Swap
Stations On Chinese Highway**



**Gone in 90 Seconds
Geely's Solution to Vehicle Charging**

Battery Swap4Truck!

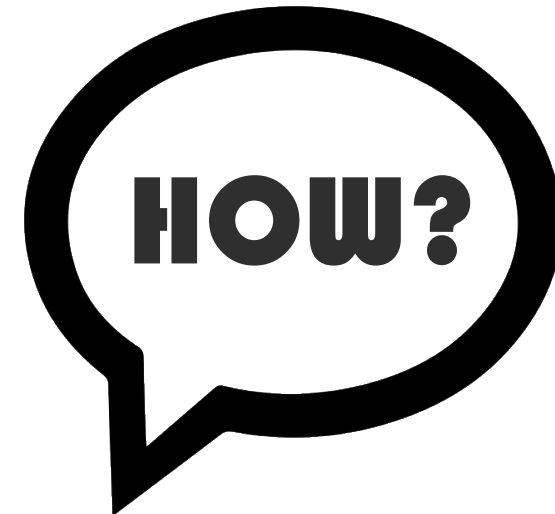
Can we standardize a battery module?

Can we keep the OEM independence?

Can we cut the recharge time and guarantee the km range?

Can we keep the transporter independence?

Can we change the logistic business?



Battery Swap4Truck!

Can we standardize a battery module?



Can we keep the OEM independence?



Can we cut the recharge time and guarantee the km range?



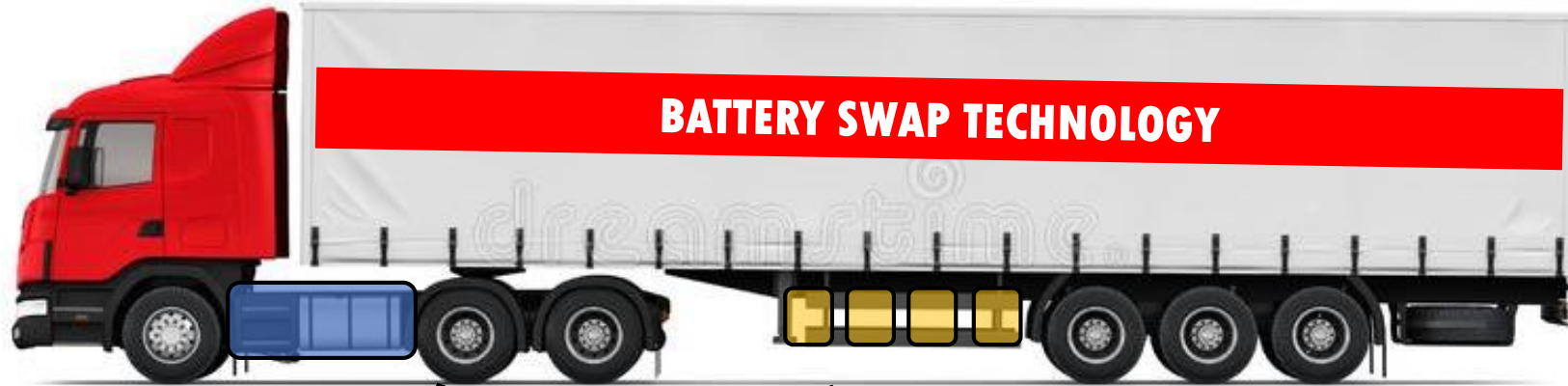
Can we keep the transporter independence?



Can we change the logistic business?

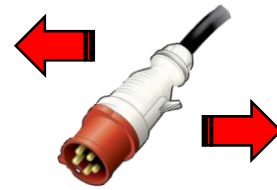


The Swap System



OEM's OWN TECHNOLOGY

E-truck - Electric Motor + integrated battery: it keeps OEMs safe from external standards and allow them to keep their core know-how internally.



STANDARD UNIVERSAL CONNECTION

Standardised connector between the modular batteries and the e-truck.



STANDARD SHARED TECHNOLOGY

Trailer with standard battery case for module universal interchange (Standard CONTAINER-like and MODULARITY)

Road sections and Business Model



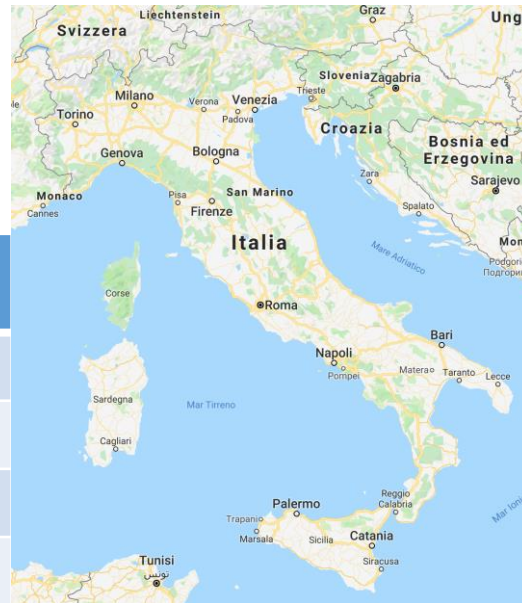
POLITECNICO DI TORINO

PATH 1: Torino – Lecce

AUTHONOMY: 400/500 km

RECH. STATIONS: 4

DEPARTURE	ARRIVAL	KM
TORINO	BOLOGNA	335
BOLOGNA	PESCARA	365
PESCARA	BARI	315
BARI	LECCE	153



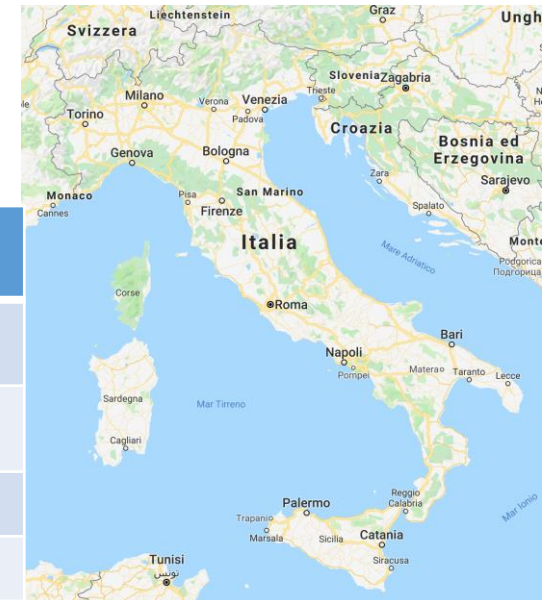
↓
NO NEED

PATH 2: Torino – Reggio Calabria

AUTHONOMY: 400/500 km

RECH. STATIONS: 5

DEPARTURE	ARRIVAL	KM
TORINO	BOLOGNA	335
BOLOGNA	ROMA	375
ROMA	SALERNO	265
SALERNO	REGGIO	440



POR FESR PIEMONTE 2014-2020
Fondo Europeo di Sviluppo Regionale

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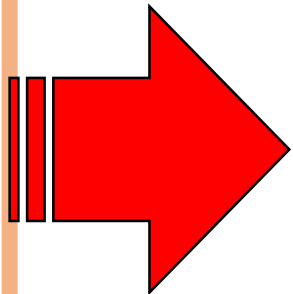
Next steps..

SWAP₄TRUCK

Battery-swap system in the trailer and not in the truck

New Business Models and Servitization

Suitable also as range extender for hydrogen truck with electric motor (hydrogen + battery fueled)



Request for ALICE association

- Would you be interested in a feasibility evaluation at European level involving logistic operators in ALICE?

#Mesapisconnection



@Mesap Innovation Cluster



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***THANKS FOR
YOUR ATTENTION!***

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Sistema Poli di Innovazione Piemonte



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