



## Past research? Fast rewind :

# Word Cloud generated from publication titles, 2013-present

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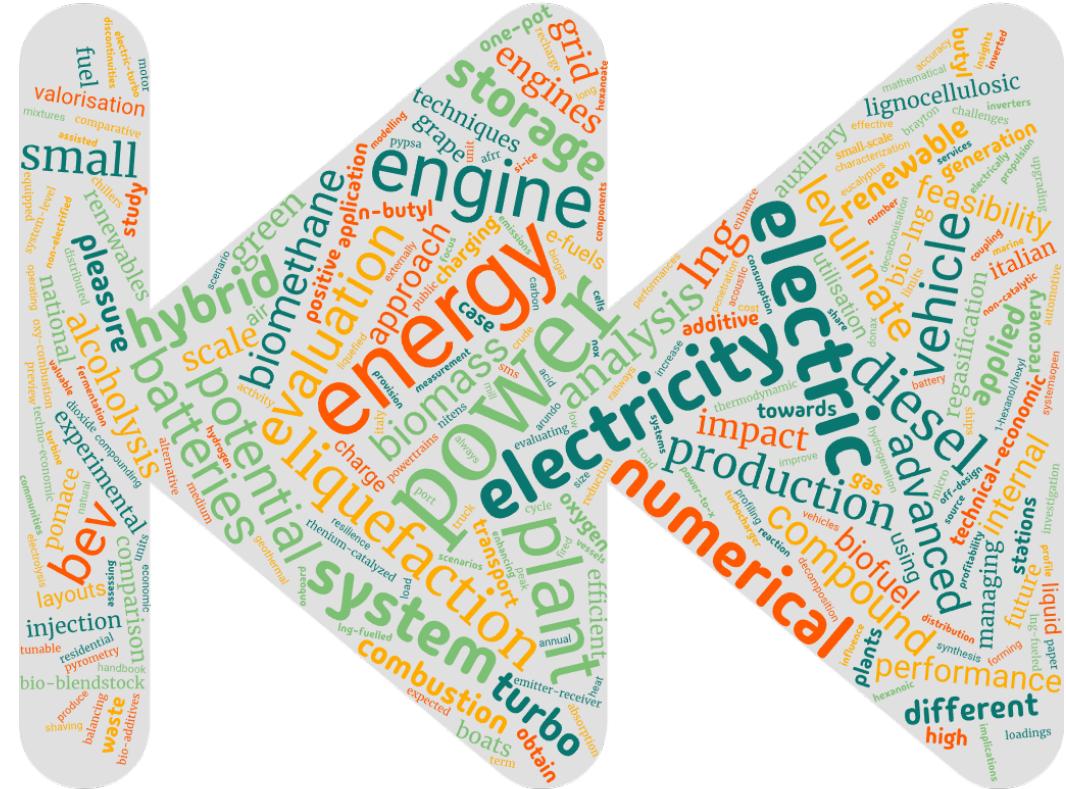


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## Google Scholar

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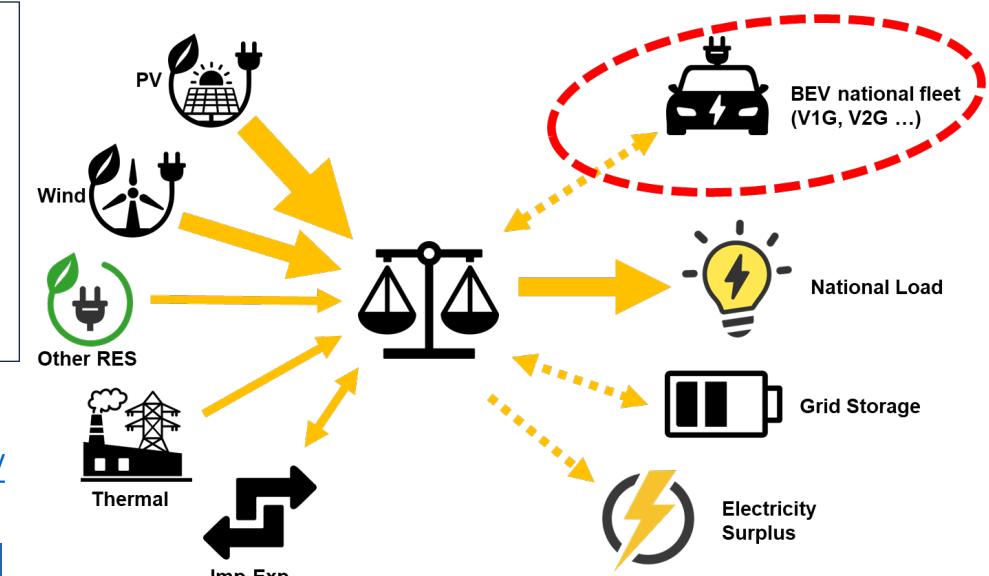
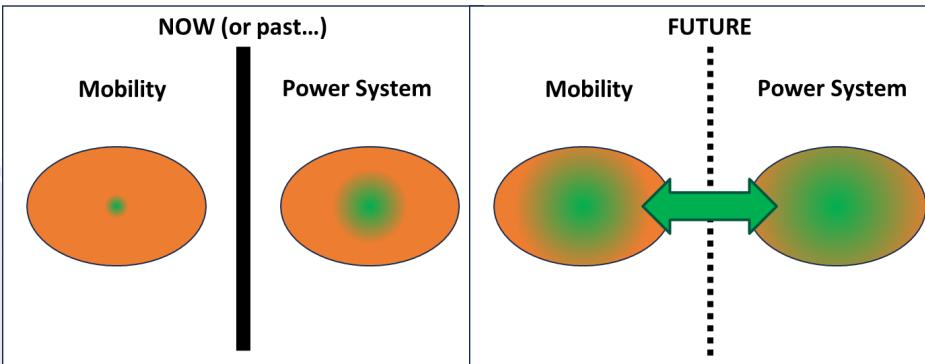
# DESTEC

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# Ongoing activities:

Since 2023, involved in the PNRR project **MOST** (Centro Nazionale per la Mobilità Sostenibile), collaborating with 24 universities, the CNR, and 24 large companies, with the mission of implementing modern, sustainable, and inclusive mobility solutions across the entire national territory. **Spoke 13 Electric Traction system and batteries.**



<https://www.centronazionalemost.it/>

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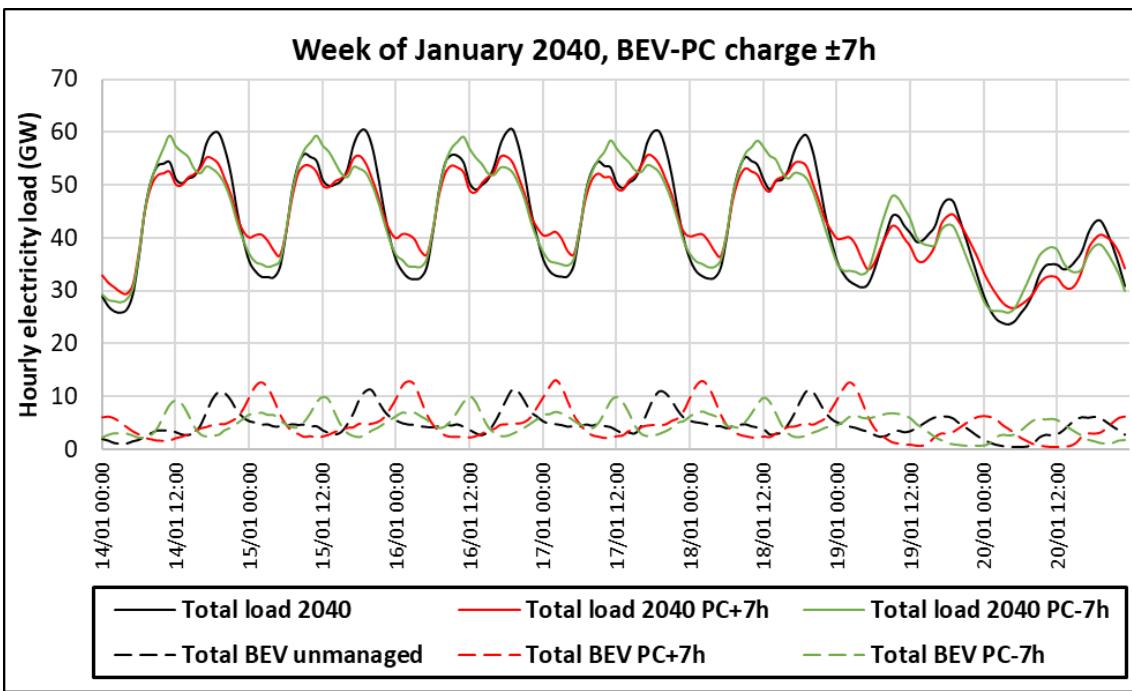
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# Ongoing activities:

Electricity mix is changing: dispatching of non-programmable RES is an open issue. Is the increasing penetration of BEVs an **obstacle** or an **opportunity**?



**Simple V1G management** can lead to **significant improvement** in grid balance, RES penetration, grid storage requirement, and overall GHG emissions. BEVs have **tremendous potential for load shifting**. With **V2G** may also directly supply energy to the grid, but more difficulties arise.



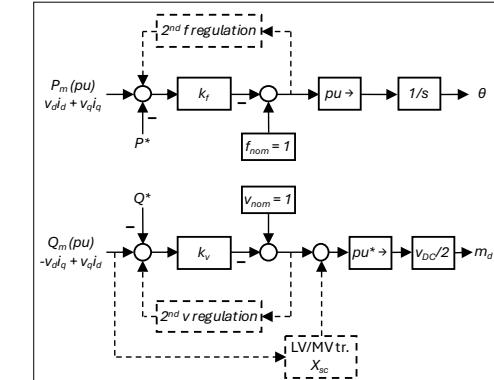
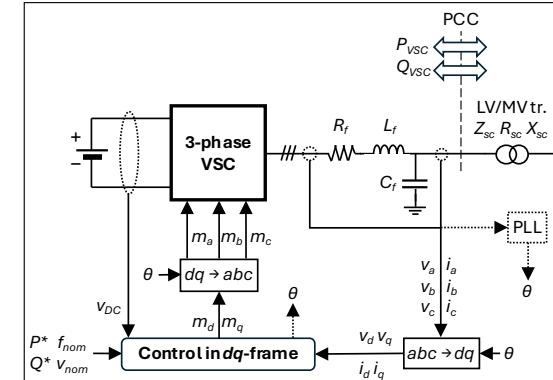
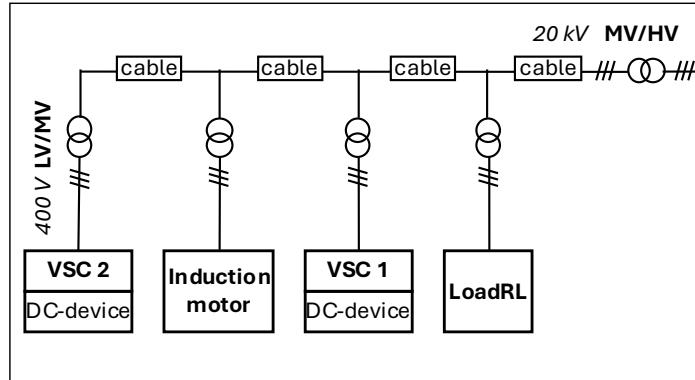
# Ongoing activities:

The massive deployment of RES generation interfaced to the grid by power electronic (PE) converters replaces synchronous generation and therefore reduces the total system spinning **inertia** -> low **stability** (resilience).

Devices connected to the grid with VSC (Voltage Source Converter), potentially **grid-forming** :

- PV panel
- Wind turbine
- Grid-scale electrochemical storage (nowadays only Li-ion reached market readiness)
- ...
- **BEV charging infrastructure !** (small VSC or bigger stationary VSC for DC-charge)

**All these devices can improve the stability and regulation of the whole power system in a short timescale.**





# Ongoing activities:

All these devices can improve the stability of the whole power system. Islanding and black-start capability.

