COST ACTION MP1004

Hybrid Energy Storage Solutions for Mobile and Stationary applications

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COST is supported by
the EU RTD Framework Programme

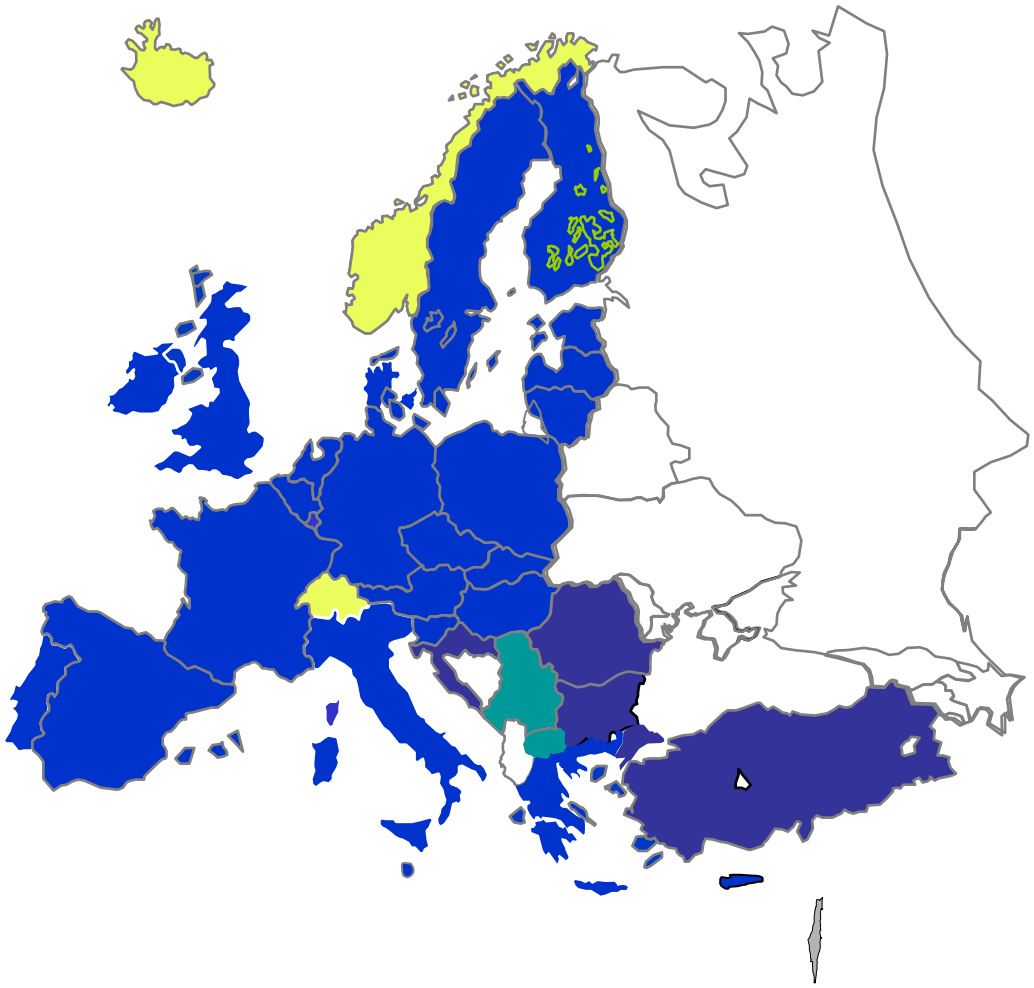
ESF provides the
COST Office through an EC contract

COST = European COoperation in the field of Scientific and Technical research

COST is one of the longest-running European instruments supporting cooperation among scientists and researchers across Europe

COST characteristics

- Co-ordination through networking
- Pan-European
- Multi-disciplinary
- National financing of researchers and projects
- Bottom-up based approach
- Flexible participation – join in if you are interested
- Focus on younger researchers
- Open to wider cooperation



COST Member States

- The EU Member States
- EFTA Member States
  - Iceland
  - Norway
  - Switzerland
- Other Countries
  - Serbia, Montenegro
  - FYR of Macedonia (FYROM)
  - Turkey
- COST Co-operating States
  - Israel

Action Parties

- *ca. 60 research institutions, universities, companies from more than 20 countries*
- *participants from Non-COST countries (Russian Federation, Morocco, Argentina and Australia)*

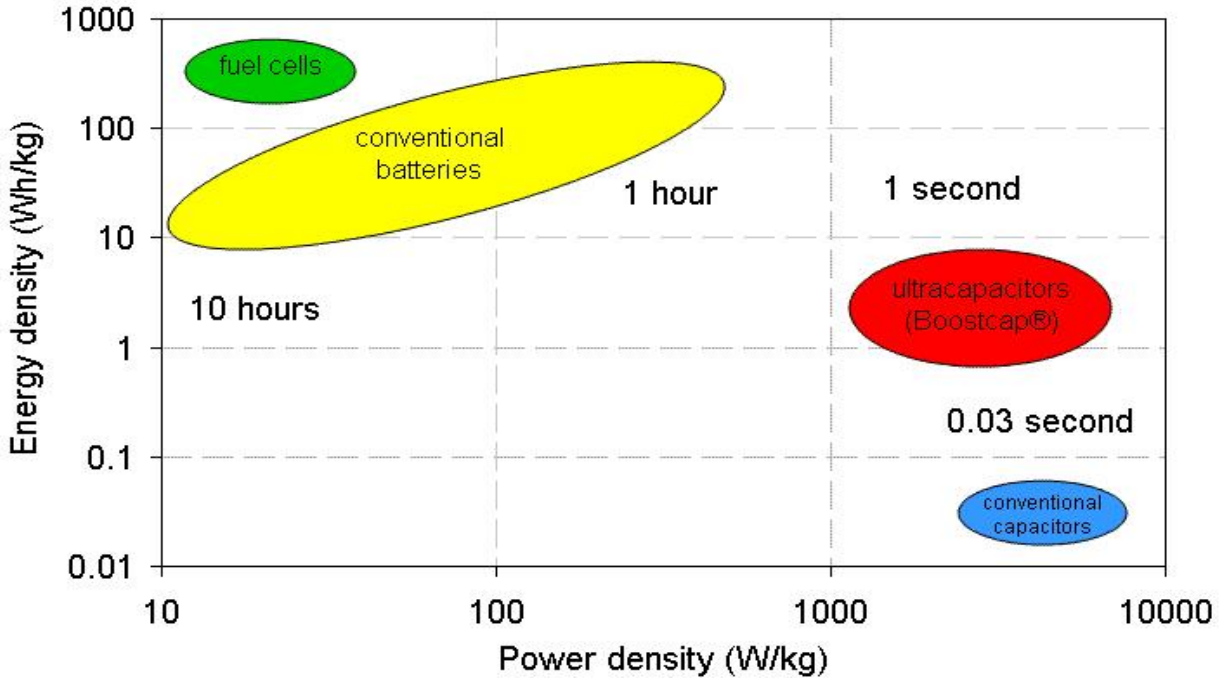
COST instruments

Working Groups Meetings, Conferences, Workshops

Short Time Scientific Missions

Training Schools

Electro-chemical energy storage devices



*Ragon chart (cell level)**

Background

Requirements on energy storage:

Wide range of requirements in transport and energy technique even within one specific application – multiple interrelated factors to be satisfied and considered simultaneously

Problem:

it is complicated to satisfy the wide range of requirements with one individual type of energy storage

- **There is still no "universal" energy storage device to satisfy the wide range of requirements**
- **The requirements can not generally be achieved with a single type of energy storage device**

Solution:

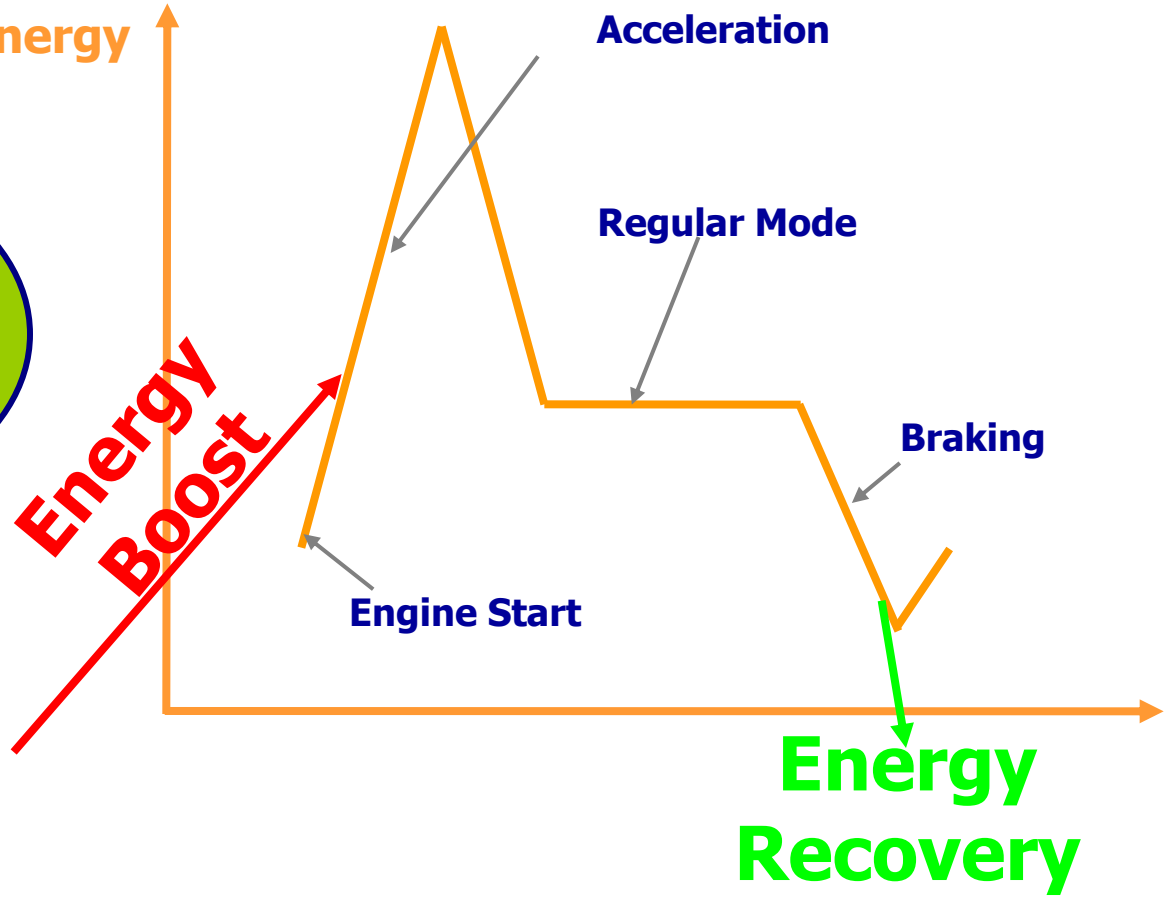
HYBRID SOLUTIONS:

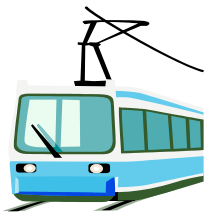
- devices

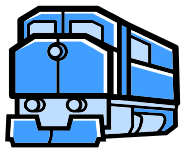
- systems

Transportation

inner - city
stop & go
mode







Hybridization = opportunity

Approach:

an intelligent combination of the advantages (of different individual types of energy storage) while disadvantages are cleverly masked

Additional aspect:

- Number of common themes within the research on individual types of energy storage devices e.g.:
  - functional material research
  - tools & technologies for materials processing

The potential for learning from each other has not been sufficiently exploited yet

Working Groups

WG1: improved materials for hybrid energy storage solutions

WG2: intelligent hybrid energy storage devices and systems

WG3: hybrid energy storage solutions for mobile applications

WG4: hybrid energy storage solutions for stationary (energy techniques) applications