

Linking with SET Plan Action 7

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Strategic Energy Technology Plan

Become competitive in the global battery sector to drive e-mobility and stationary storage forward

11/01/2018

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What is the SET Plan?

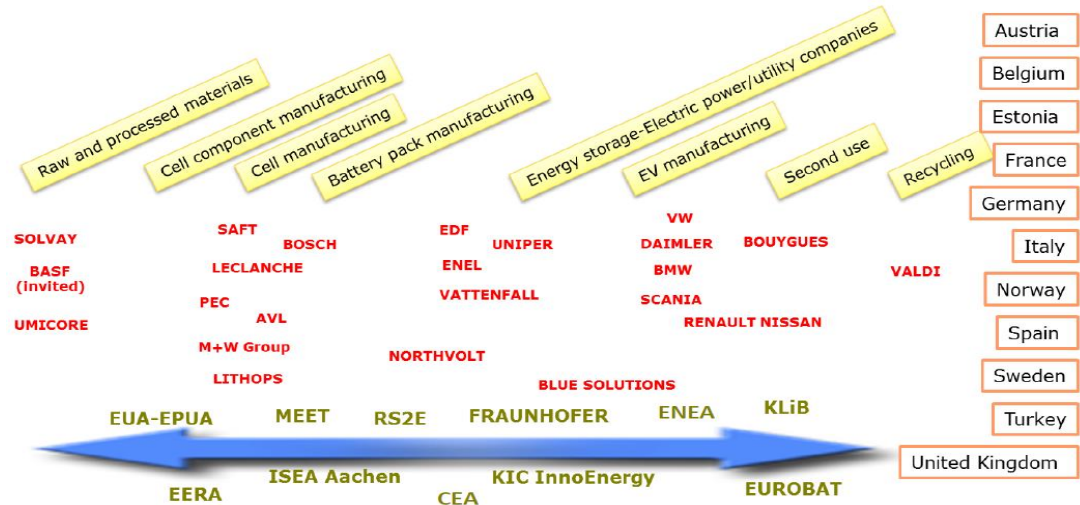
- Key innovation pillar of the Energy Union
- Comprehensive energy R&I agenda to accelerate innovation and the energy transition
- Better alignment of European and National R&I programmes thus making better use of existing resources
- Integrated approach: going beyond technology silos
- Setting priorities: focus on specific targets

What the SET Plan is not?

- The SET Plan is not a funding instrument

SET Plan Action 7

- Become competitive in the global battery sector to drive e-mobility and stationary storage forward
- Working Group
 - Led by France
 - 40 participants from SET Plan Countries (FR as Chair), industry (SAFT as co-Chair), and research organisations along the whole value chain
 - Facilitated by the Commission





European
Commission

SET Plan Action 7: targets

TARGETS		Current (2014/ 2015)	2022	2030
Cost target				
1	Battery pack cost for automotive applications [€/kWh]	180-285	90	75
2	Cost for stationary applications requiring deep discharge cycle [€/kWh/cycle]		0,1	0,05
TARGETS		Current (2014/ 2015)	2020	2030
Manufacturing targets				
1	Automotive (Li-ion and next generation post-lithium) battery cell production in EU [GWh/year] ²⁴ (% supporting EU PHEV+BEV production)	0,15 – 0,20 ²⁵	5 (50% of the 0.5 M EVs with 20 kWh)	50 (50% of the 2 M EVs with 50 kWh)
2	*Utility Storage (Li-ion and next generation post-lithium) battery cell production in EU [GWh/year]	0,07 – 0,10 ²	2.2	10
3	Recycling			
	**Battery collection/take back rate	45% (Sept 2016)	70%	85%
	Recycling efficiency (by average weight)	50%	50%	50%
	Economy of recycling	Not economically viable	Break even	Economically viable
4	Second Life	Not developed	Developed	Fully established

■ Specificities of Action 7

- Technology-specific
- Manufacturing is explicitly included
- Competitiveness
 - R&I needs to cover full value chain
 - To include considerations beyond R&I

■ Implementation Plan adopted on 29.11. 2017

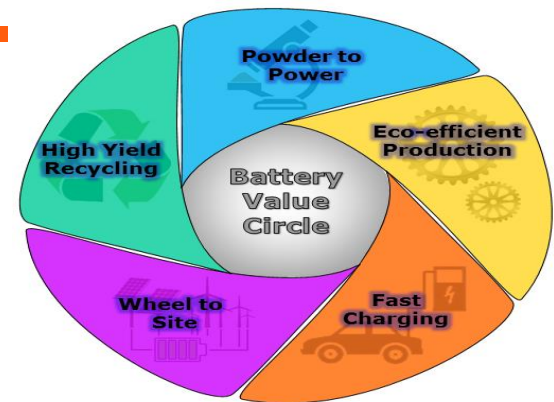
- 15 R&I activities (structured around 5 Flagships) and non-R&I barriers
- Volume of investment to be mobilised: ca. 600 M€
- Funding sources and instruments: mix of private, MS and EU funding

Implementation Plan

Focus Area 1: Material/Chemistry/Design+ Recycling	
1.1	Advanced Lithium-Ion batteries for e-mobility
1.2	Influence of Fast/Hyper charging of Li ion batteries on materials and battery degradation
1.3	Advancement of batteries for stationary energy storage (ESS)
1.4	Beyond Li-ion / Li-based batteries for e-mobility
1.5	Develop circular economy and de-bottleneck availability of critical raw materials
1.6	Lithium recovery from European geothermal brines and sustainable beneficiation processes for indigenous hard rock occurrences of lithium
Focus Area 2: Manufacturing	
2.1	Foster development of materials processing techniques and components for fast industrialization compatible with present mass production lines
2.2	Foster development of cell and battery manufacturing equipment
Focus Area 3: Application and Integration	
3.1	Hybridisation of battery systems for stationary energy storage (ESS)
3.2	Second use and smart integration into the grid

- Input to the R&I dimension of the EU Battery Alliance

- Material Flagship
- Manufacturing Flagship
- Fast-charge Flagship
- Second-use Flagship





Conclusion

- The SET Plan Action 7 Implementation Plan includes the main R&I priorities jointly agreed by industrial and research stakeholders, Member States and the European Commission.
- Funding for its execution will come from private, national (public) and European sources (that's why it is an input for this workshop).
- The Implementation Plan is available online:
<https://setis.ec.europa.eu/batteries-implementation>

Thank you