

Today's Presenter



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- Energy Storage and Power Supplies expert.
- 3+ years of research and consulting experience.
- Bespoke consulting assignment providing the go-to-market strategies and due diligence for for leading OEMs in the Global Battery Energy Storage space.
- Delivered 20+ research and consulting deliverables on energy convergence topics including Batteries, Energy Storage, Electric Vehicle and Digitization of energy sectors.
- Devised Mergers and Acquisition strategy for a leading engine manufacturer.

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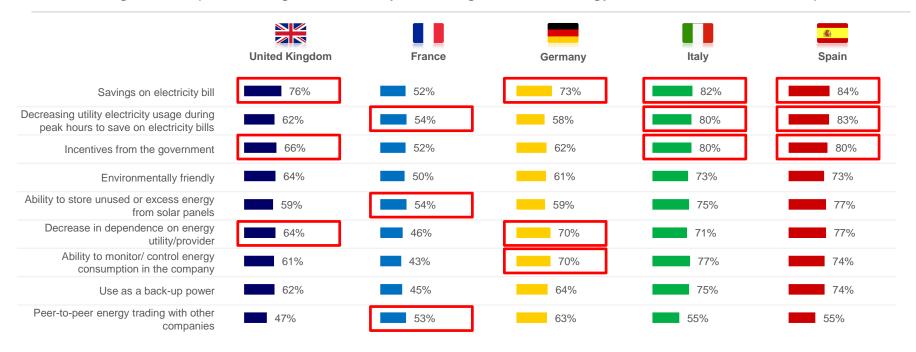
Agenda

- Motivations, Disadvantages and Key Influencers in the purchase decision
- 2 Key Market Analysis for commercial battery storage
- Growth Opportunities in the Battery Storage Market
- 4 Key Strategic Messages

Source: Frost & Sulliva

Start of the Journey – Motivations to Purchase

Cost savings, avoid peak charges and ability to storage excess energy from solar PV are the top benefits.



To what degree would the following uses and benefits of battery energy storage systems motivate your company to start or continue investing in such system?

What is Holding Firms Back? Perceived Disadvantages

Across Europe, the main disadvantages are upfront cost, maintenance costs and the long payback period.

	United Kingdom	France	Germany	Italy	S pain
Device is too expensive to purchase or rent	36%	57%	51%	33%	37%
Maintenance costs are too high	30%	53%	43%	34%	45%
Payback time is too long	28%	59%	41%	30%	38%
Cost and potential damage to the building while installing this system	30%	64%	36%	1 1%	28%
Fire hazard	27%	57%	48%	21%	20%
Integration with our other energy management solutions may be a problem	24%	54%	39%	32%	26%
Solution is not tested properly / is not properly developed	27%	57%	37%	1 5%	1 9%
It is difficult to use	8%	58%	44%	9%	1 4%
Solution does not work as it should / it is expected from this kind of device	1 8%	53%	35%	1 4%	1 1%
Other	1%				
I do not see any problems	8%		3%	6%	6%

Base: All respondents

What disadvantages or concerns do you associate with battery energy storage solution?

People Influencing the Decision Making Process

Who is the Opinion Leader in Europe?



Base: All BES users Q24. Whom did you ask before purchasing your battery energy storage system? PV provider 56%

Facility Management Company, Energy Service Company 44%

Energy utility employee 33%

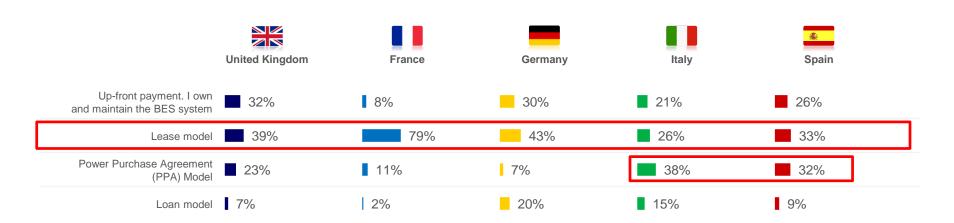
Energy consultant 33%

Electrician 28%

Sales manager(s) of battery manufacturer 22%

How do commercial users want to pay for energy storage?

Payment methods for battery storage is inclined towards leasing model across Europe.

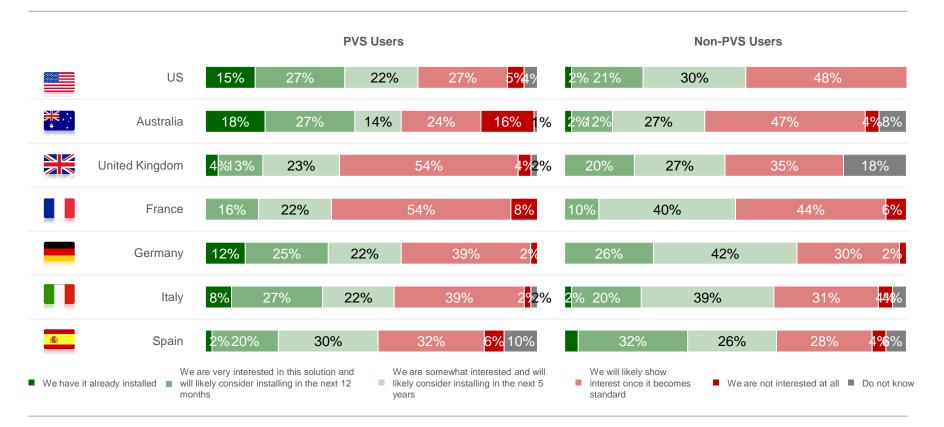


Base: All respondents (n=721)

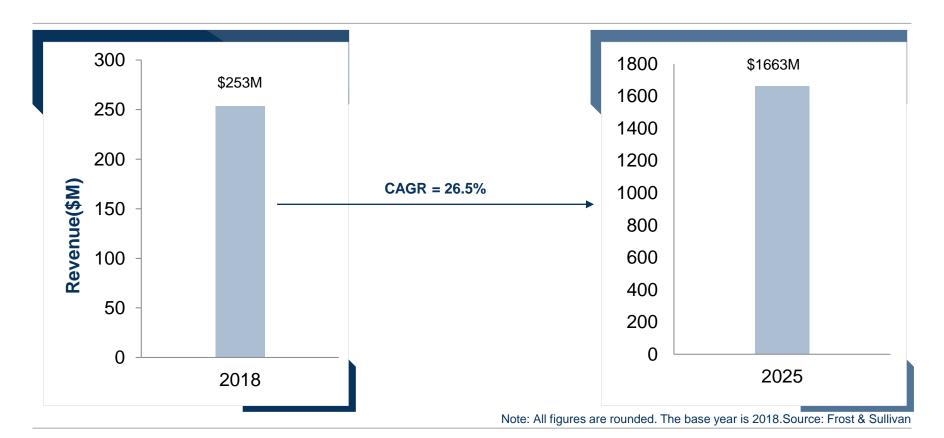
Q44c. What would be your preferred payment model for battery energy storage solutions?

Current and Future Adoption of Battery Storage Solutions

Across Europe, there is a clear intent to adopt BESS among both PVS and Non-PVS users



Revenue Forecast – Total Commercial Battery Storage Market



Key Markets – Country Analysis

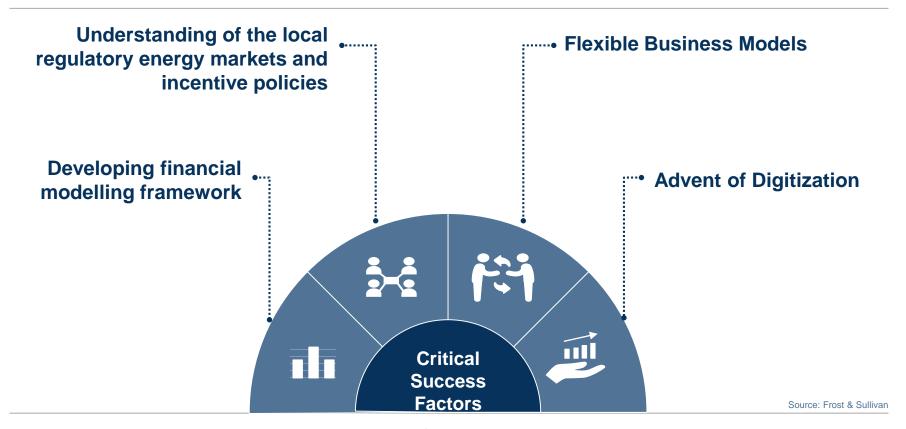
Germany and UK will be the two major markets for commercial energy storage in Europe.

The ending of feed in tariffs in One most attractive country's for commercial battery 2019 creates an opportunity as storage owing to the high feeding excess energy into the grid becomes less attractive. demand charges. New tax exemption for selfconsumed energy is expected to drive the uptake of storage solutions. Low BES penetration, but similar to France the elimination of the self consumption tax is expected to fuel market growth. The combination of high electricity tariffs and the need for increasing resiliency drives demand for storage in Italy.

Competitive Landscape-Commercial Battery Storage Market

	Storage System	Project Development	System Integration	Installation and Support	Financing options	Software Capabilities	Asset Management
POWERPACK TESLA COMMERCIAL BATTERY	4		S			Q O	
LG Chem	3					OO	
ABB	3		\$	•		O	
AES we are the energy	F		\$	•		O	
sonnen	3		\$			OO	
Y	3		\$	¥ .		OO	
Greensmith	3		\$			OO	

Strategies to unlock the market potential



Key Recommendations – Reaching the Customer



Promote Alternative Payment Methods



Educate Consumers about Safety Measures



Target facilities subjected to high peak demand charges



Communicate Freedom



Leveraging Multiple revenue streams



Intensify Promotional Activities to PV system providers



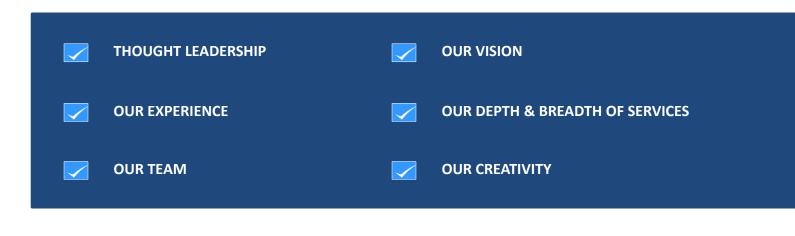
Flexible payment models



Use BES Maintenance as Regular Customer Touchpoint

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Everyone has an opinion on the future. Not everyone is as successful at identifying opportunities poised for growth as we are. From ideation to realization, we have the proven strategies and the implementation best practices to help organizations overcome challenges and identify new opportunities before their competitors to help achieve transformational growth. Over the past six decades, Frost & Sullivan has become world-renowned for its role in helping investors, corporate leaders and governments navigate economic changes and identify disruptive technologies, mega trends, new business models and companies to action resulting in a continuous flow of growth opportunities to drive future success.



For Additional Information

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