



CLEANHORIZON

ENERGY STORAGE ONLINE SESSIONS MARCH & JUNE 2023

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Energy Storage

Online Sessions – March & June 2023

Session 1

Introduction to energy storage

March 14th – June 13th, 2:00 PM – 5:00 PM CEST

Session 2

Business models and revenue streams in Europe

March 16th – June 15th, 2:00 PM – 5:00 PM CEST

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Corentin Baschet
MS.c. Head of Market analysis

Corentin graduated in engineering at Ecole des Ponts et Chaussées in Paris and studied his master in sustainable energies at the Imperial College in London.

At Clean Horizon, Corentin is the head of market analysis activities, thus overseeing one of the two business units in the company. As such, he acts as project manager on key market analysis projects. In parallel he maintains a hands-on approach of key development markets for the ESS market, such as African and ASEAN countries.



Michael Salomon
CEO Founder and Senior Consultant

Michael obtained his engineer's degree at Mines ParisTech in France and his Ph.D. at Stanford in the USA.

In 2009, he founded Clean Horizon in Paris France which he has led and grown since then. Since its creation, Clean Horizon has confirmed its status as the world's sole energy storage "one-stop shop" consultancy, acting both as market analyst and a technical consultant. Michael now also serves as President of Clean Horizon Americas, based in Miami Florida.

A keen observer of the energy storage industry across all continents and an experienced consultant, Michael contributes to most of the market analyses prepared by Clean Horizon.



Naim El Chami, MSc.

Senior Hydrogen and Energy Storage Analyst – Head of Training

Naim completed two Engineer's degrees at CentraleSupélec (France) and Saint Joseph's University (Lebanon). He obtained his Digital Economics and Network Industries Master's degree from Paris Dauphine University and Paris-Saclay University (France).

At Clean Horizon, Naim has been in charge of conducting multiple energy storage studies on geographies as different as the United States, Latin America, Europe and the Middle East. He is spearheading knowledge management activities in the company as the one-stop person both for market analysis - due to his involvement in Clean Horizon's CHES storage project database - and regulatory watch. He supports the hydrogen team from the regulatory and market knowledge angles.



Rachel Locquet, MSc.

Hydrogen and Energy Storage Analyst

Rachel completed her Engineer's degree at Institut d'Optique (France) and pursued with a double degree at Imperial College London (United Kingdom) where she completed her Sustainable Energy Futures Msc. Her Masters thesis enabled her to use her mathematical modelling skills to suggest an optimum electrification strategy to a region of Sri Lanka using the GAMS modelling tool.

At Clean Horizon, Rachel specializes in the optimization of hydrogen production and storage systems dispatch: she uses her modelling skills and electricity market knowledge to create complex, market-based business models to optimize the design of renewable + hydrogen plants.

Introduction to energy storage

Applications

Technologies

Costs

Risks



Objectives

Global energy storage markets, taking a look at the broader picture from an international perspective

Energy storage technologies and applications



Who should attend?

Any stakeholder interested in understanding the energy storage markets and the different technologies available



Prerequisites

None

Webinar training – Session 1

Introduction to energy storage

Applications

Technologies

Costs

Risks

When:

March 14th, 2023, 2:00 PM to 5:00 PM CEST

June 13th, 2023, 2:00 PM to 5:00 PM CEST

What's included:

- 3-hour live webinar
- Q&A
- Training slides

Price:

- **400 EUR net of VAT per participant**
- **GROUP DISCOUNT** (3 - 5 participants from the same company): benefit from a total price of 1 000 EUR net of VAT per session

Detailed agenda – Session 1

Introduction to energy storage

Applications

Technologies

Costs

Risks

1

Introduction to international storage markets

- Brief overview of energy storage technologies
- Energy storage leaderboard
- Main applications of utility-scale energy storage

2

Lithium-ion: what to expect for the next decade ?

- Breakdown of the turn-key battery storage system cost
- NMC vs LFP, what is at stake
- The fire risk explained
- Recycling & repurposing

3

Global market trends

- Choosing between AC- and DC- coupling
- Aggregation: a must-have for storage

Business models and revenue streams for energy storage in Europe in 2023



Objectives

This session is a great introduction to:

Understanding of the market structure in Europe and its benefits for energy storage
Understanding of the market developments for storage to provide a variety of services across the electricity supply chain (generation, transmission, distribution)



Who should attend?

Investors, developers, independent power producers willing to have a good level of understanding of the different revenue streams available for storage system in Europe.

This session is also a good opportunity for stakeholders worldwide to understand how the European market structure enables storage development through revenue stacking to maximize benefits.



Prerequisites

None

Business models and revenue streams for energy storage in Europe in 2023

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Detailed agenda – Session 2

Business models and revenue streams for energy storage in Europe in 2023

- 1 Introduction to European storage markets**
 - Overview of installed capacity per country

- 2 Capacity markets**
 - Why do we need capacity payments
 - The strike price model VS the availability model
 - Example of the French long-term capacity auction

- 3 Frequency Containment Reserve**
 - The FCR cooperation
 - FCR price : where will the decline end ?

Detailed agenda – Session 2

Business models and revenue streams for energy storage in Europe in 2023

4

Fast frequency control services

- The growing need for fast frequency control
- Example of the Dynamic Containment, Great Britain's most lucrative ancillary service

5

Secondary reserve markets

- The PICASSO cooperation project
- How to generate revenue with storage assets on the aFRR
- Example of Belgium: energy storage takes advantage of Elia's new aFRR format

6

Conclusion

- Mapping of the major opportunities for storage in Europe
- A quantitative forecast of the storage landscape in 2025

Registration Process

ONLINE REGISTRATION on <https://www.cleanhorizon.com/online-store> :

Interested in signing up for both sessions (when applicable)?

You can benefit from an additional discount if you sign up to the 2-in-1 session package!!!

Please select our 2-in1 training webinar in our online store.

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You will need to create your online client account to proceed with payment through PayPal. Once your payment is done, you will receive a confirmation of your registration by email (please check on your spam box).

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- The company name, its billing address, its VAT number and any other mention (such as purchase order) needed by your finance department,
- The title of the training webinar for which you want to book attendance
- The first name and family names of the attendee(s)

FOR MORE INFO, please feel free to contact us at training@cleanhorizon.com



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