



Support in MACSE auctions participation

AFRY offering on bidding strategies for the Italian power market

Agenda

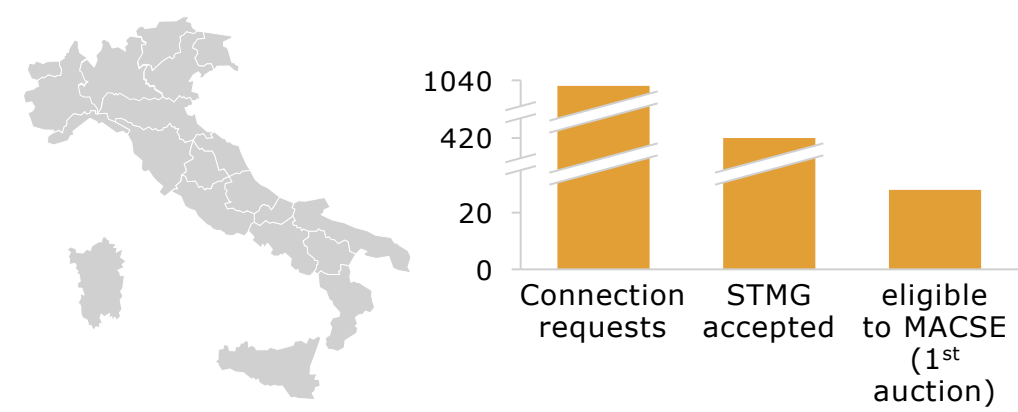
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3	Annex	14



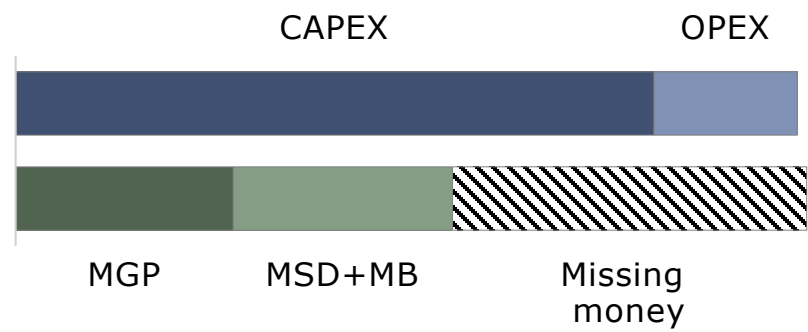
CONTEXT

By 2030, BESS capacity in Italian power market will be sustained by MACSE, as competition is high and being awarded is crucial for BESS investments

BESS PIPELINE (GWH)



MISSING MONEY FOR 4H BESS IN SOUTH REGION, COD 2028



TOP REASONS FOR AUCTION SUPPORT

Access to MACSE incentive is crucial for BESS profitability and in such a competitive environment developing a **good bidding strategy** depends on:

- 1 **Internal factors**

Expected returns, risk appetite, technical project standards, and optimal bidding price to ensure cost recovery and efficient asset operation
- 2 **External factors**

Projections of the expected behavior of competitors based on detailed pipeline assessment

Key AFRY's value added

Deep knowledge of the Italian BESS market and competitive landscape which enables data-driven decision-making

Source: MASE, Terna, AFRY analysis

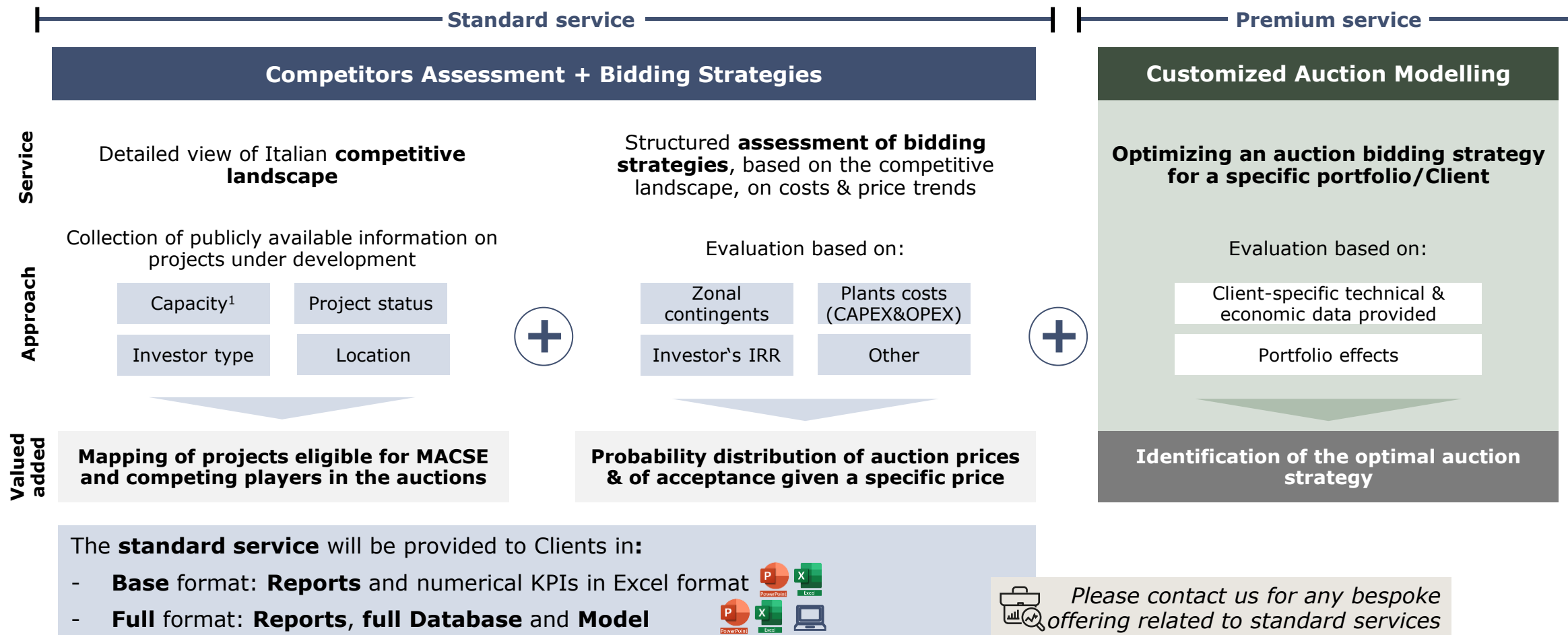


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AFRY combines comprehensive pipeline assessment with a detailed view on the Italian market to develop a detailed bid strategy for MACSE auctions



Notes: 1) Up to Municipal detail

AFRY OFFERING

In-depth mapping of the competitive landscape for MACSE auctions, with detail of the pipeline (capacity, status, investor etc.) up to municipal level

**KEY QUESTIONS THE ANALYSIS WILL ANSWER**

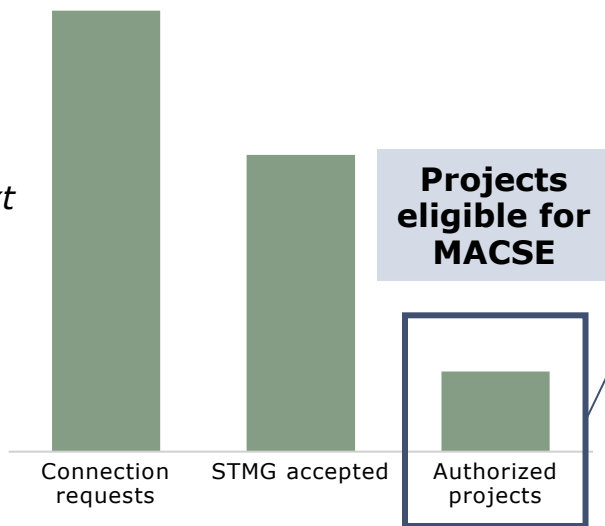
What is the competitive landscape of the auction? What are the characteristics of eligible projects? Who are the competing players?

**BESS project pipeline and competing players mapping**

ILLUSTRATIVE



Focus next slide

**Detailed assessment¹**

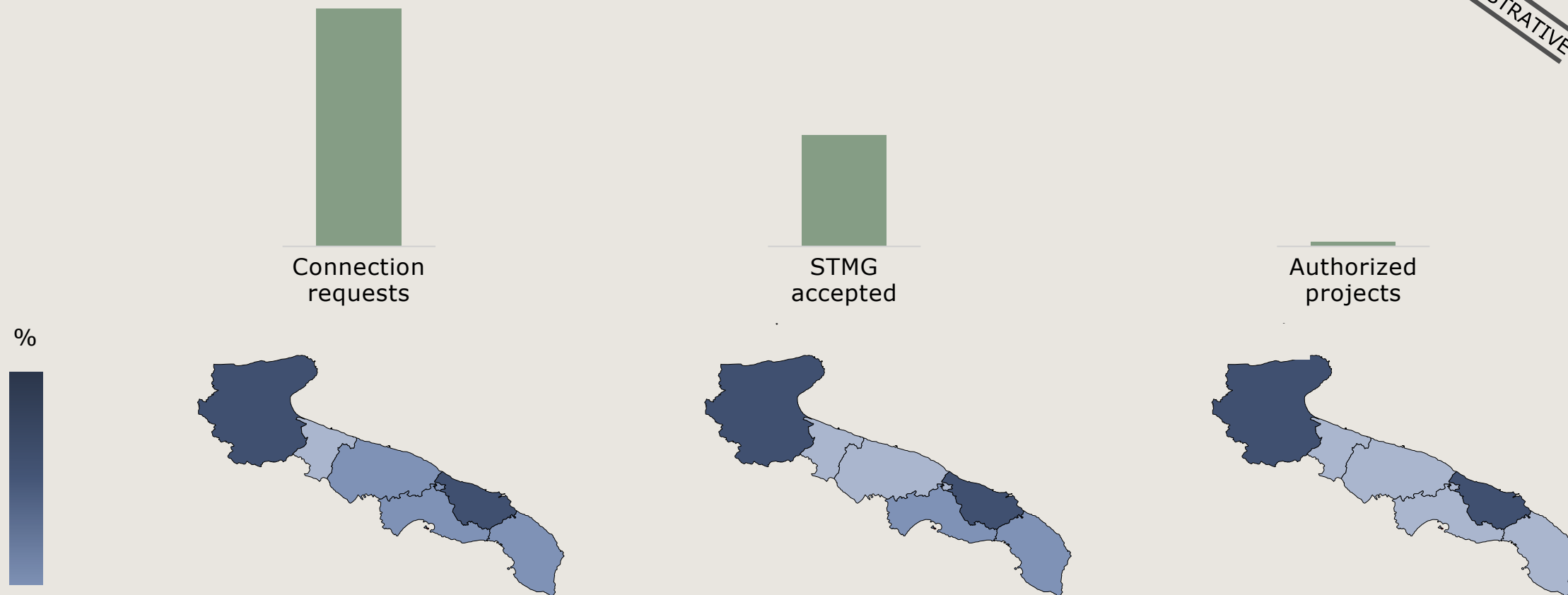
Projects	Technology	Developer	Location	Capacity (MW)	Dev Status
Project 1	Stand-alone	Fund A	North	19.99	PAS process
Project 2	Stand-alone	Utility B	South	26	VIA submitted
Project 3	Co-located	Utility C	Sardinia	78	VIA submitted
Project n	Stand-alone	Developer N	Calabria	19.1	Authorized

Notes: 1. The evaluation will be conducted using a database developed by AFRY, which compiles all publicly available information on authorization procedures from various sources and administrative levels, including MASE, regional BAUR, and Municipal Administrations.

AFRY OFFERING

AFRY will provide the Client with detailed information up to project level of the BESS pipeline

STATUS OF BESS PROJECTS IN APULIA



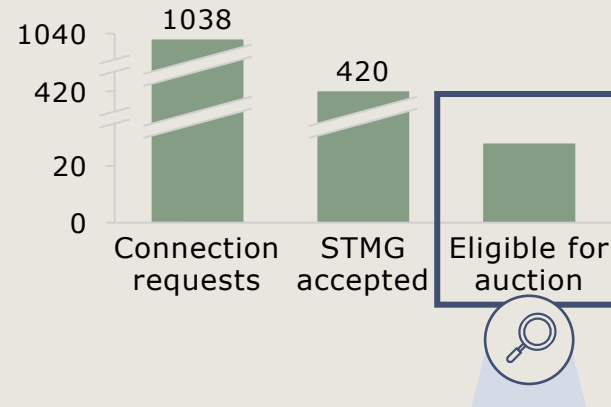
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AFRY OFFERING

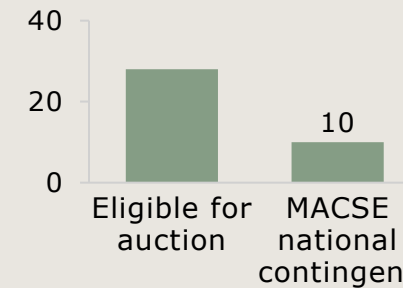
For the first MACSE auction, competition will be high as eligible projects will exceed the total national contingent

ILLUSTRATIVE

PIPELINE OF PROJECTS (GWH)

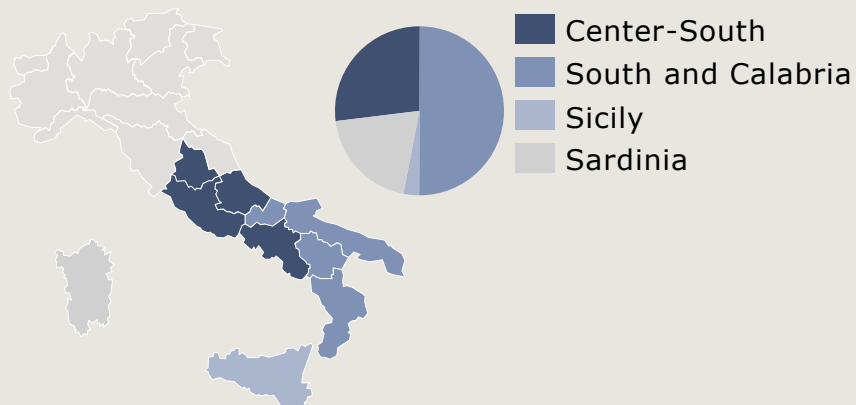


MACSE CONTINGENTS FOR THE FIRST AUCTION (GWH)



Eligible projects are higher than the MACSE contingent for the first auction

SHARE OF ELIGIBLE PROJECTS BY MARKET ZONE



BESS MIN AND MAX LIMITS [GWh]

ZONE	MIN	MAX
Center-South	0	3
South and Calabria	0	7
Sicily	0,5	1,5
Sardinia	0,5	1

Sources: Terna, AFRY analysis

AFRY OFFERING

The mapping and AFRY's view on key techno-economical parameters will inform the assessment of potential bidding strategy in MACSE auctions



KEY QUESTIONS THE ANALYSIS WILL ANSWER

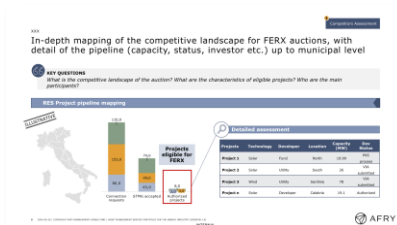
What will be the range of prices offered in the auctions? What is the maximum price that guarantees access to the incentive? Given a specific bid price, what is the probability of acceptance?



Identification of minimum bidding price

1

Competitors Assessment



Based on AFRY's expertise, assignment to each listed project of values for:

Zonal contingents

Plants costs (CAPEX&OPEX)

Investor's IRR

Other

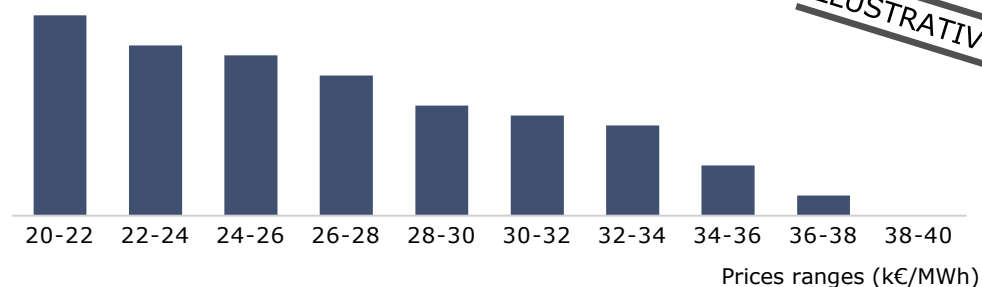


Identification of a **bidding price that allows each given project to achieve the selected IRR**

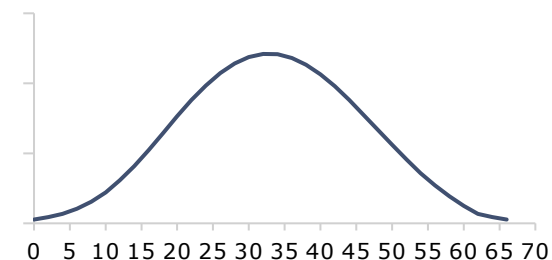


Price distribution

AWARDED CAPACITY (MW)



MARGINAL PRICE DISTRIBUTION

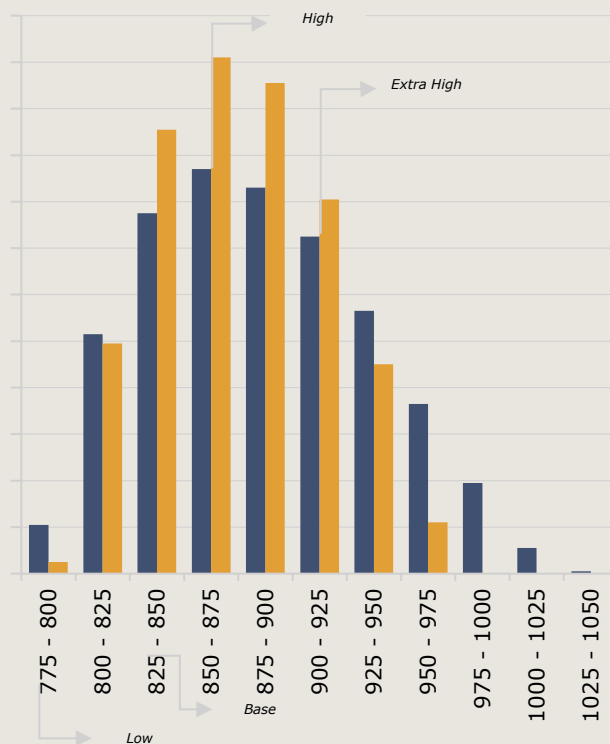


AFRY OFFERING

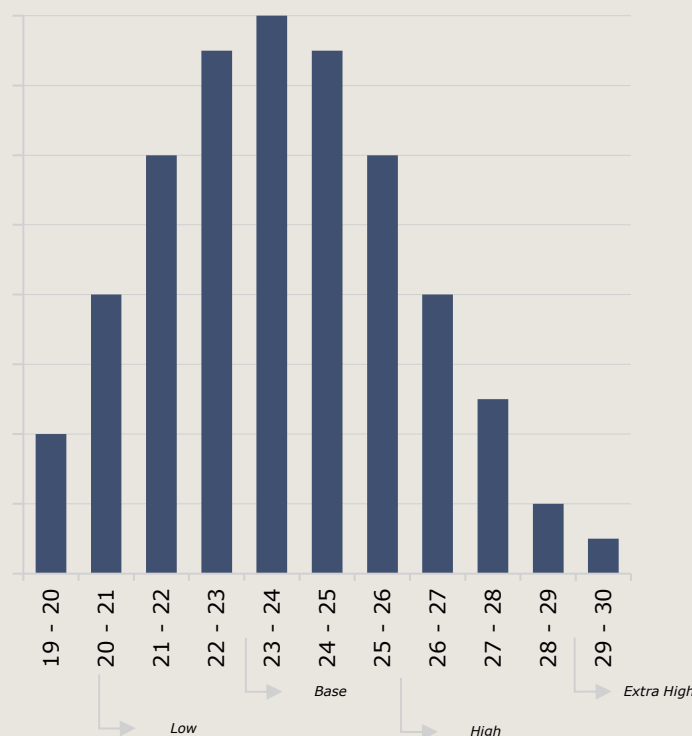
AFRY can support the Client in defining probability functions to potential Capex, Opex and return on investment expectations

ILLUSTRATIVE

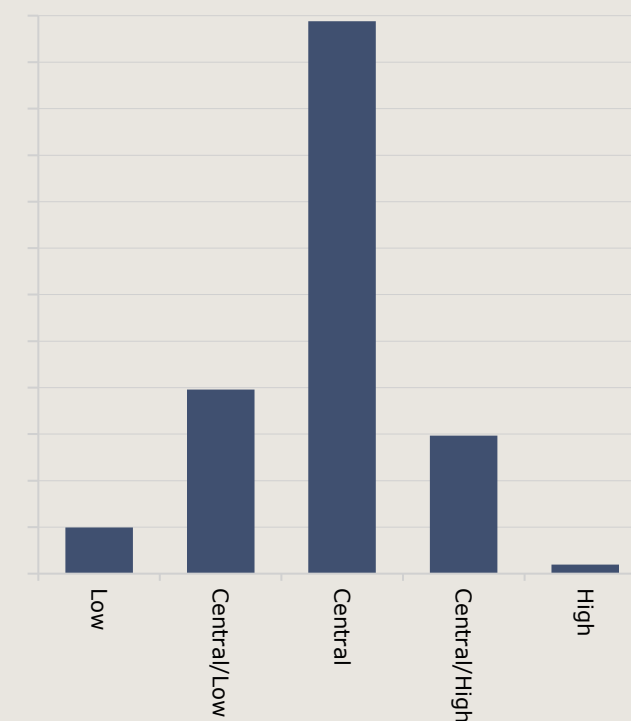
Capex (m€)



Opex (€/kW)



Return on investment expectations



AFRY can support clients in building customized auction strategies taking into account portfolio characteristics and strategic criteria set by the client



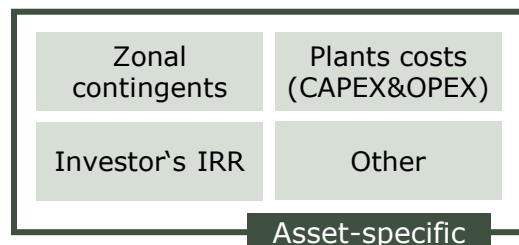
KEY QUESTIONS THE ANALYSIS WILL ANSWER

Taking into account the Client's specific portfolio and defined strategic criteria, which bidding strategy would be most effective in enhancing the likelihood of securing the incentive?



Definition of a portfolio-specific bidding strategy

Based on Client's input, assignment to each project in the portfolio of values for:



Analysis of portfolio effects



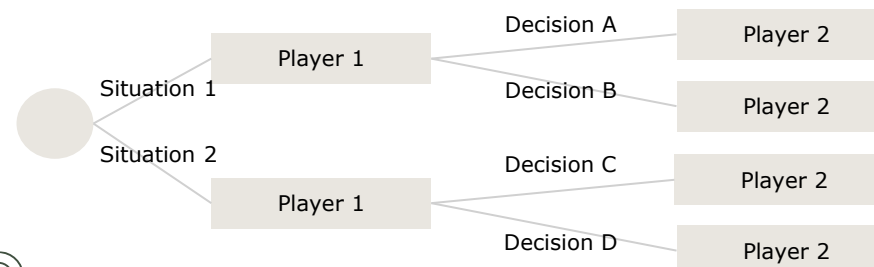
Winning of only some plants may impact overall portfolio development costs due to economies of scale



Need to consider whether some plants are 'pivotal' or 'strategic' for the Client (*anchor plants*)



Customized auction games



OBJECTIVES

Studying the behavior of participants: how they bid, how much they are willing to pay, and how they react to each other's strategies.

Optimizing bidding strategies, to determine the most advantageous approach.

Allocating resources: to allocate goods or opportunities in a competitive and optimal way.



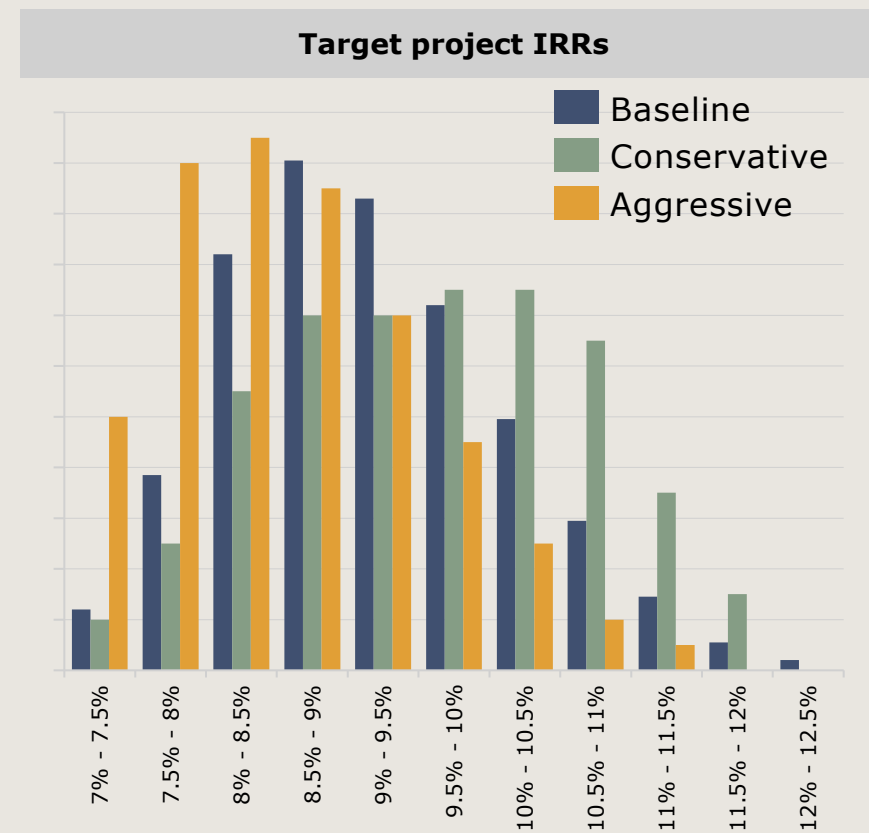
AFRY can develop bespoke sensitivities of potential bid strategies implementing specific assumptions affecting MACSE bidding prices agreed with the Client

AFRY OFFERING

AFRY will be able to create different sensitivities where different bidding profiles associated to companies' clusters are simulated

ILLUSTRATIVE

Sensitivity			
	Conservative	Baseline	Aggressive
Bidding profile	Very aggressive		Cluster A
	Aggressive	Cluster A	Cluster B
	Baseline	Cluster A	Cluster B
	Conservative	Cluster B	Cluster C
	Very conservative	Cluster C	



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WHY AFRY?









AFRY combines a solid market and regulatory knowledge with unique experience in technical and economic evaluations in the Italian BESS market





SELECTED REFERENCES










AFRY has broad experience across the world on supporting Clients with bidding strategy and auctions participation

Client	Country	Description
Upstream gas producers and downstream gas shippers		Training on auctions rules for UK entry capacity purchasing mechanism and support during the auction process
Confidential retail client		Support with bidding strategy and auction procedures in the Italian retail liberalisation auction
Confidential client		Design of bidding strategies for the participation in the Greek renewable auctions
Large utility active in Mexico		Support for the participation into the fourth long-term Mexican auction, with identification of different strategies for different projects in pipeline
Developer of advanced gasification EfW projects		Support in the comprehension of the competitive landscape for the second renewable subsidy auction based on CfD scheme in UK
Offshore wind developer		Support in the comprehension of the competitive landscape for the second renewable subsidy auction based on CfD scheme in UK
Small hydro developer		Design of a set of bidding strategies for a small-scale hydro bidder for the first Mexican long-term auction
Confidential client		Analysis and strategic support to a client to maximize the possibilities of a positive outcome for the British Capacity Auctions



SELECTED REFERENCES












AFRY has a unique experience on BESS projects having recently conducted several commercial and technical DDs across different geographies...

Client	Country	Description
Confidential, 2024		Market, commercial and technical (including HSE) Due Diligence Report for the investment in a RES platform operating in Italy
Confidential, 2024		Buyer commercial and technical due diligence of a 60MW early-stage BESS project in Southern Italy
Confidential, 2024		Commercial, technical, and ESG Due Diligence report of a major BESS asset in the Netherlands
Confidential, 2023		Vendor Market and Commercial DD of one of the largest BESS and flexibility portfolio in Italy, including projects covering the entire Italian peninsula
Confidential, 2023		Strategic DD for potential acquisition of 100 MW BESS. Outline of fundamental key business drivers, regulation framework and evolution, trading strategies, BESS market landscape and forecast deployment, scenario projection, etc...
Confidential, 2023		Vendor DD of a French RES, BESS and EV player. Provide in-depth insights on the capability of the Client from a technical and commercial perspective to execute expansion plan and recommendations for potential future investor on target value
Confidential, 2023		Commercial and market DD in the acquisition of Statera Energy Limited
Confidential, 2023		Commercial and market DD for a confidential client interested in a potential acquisition of 650MW distribution connected battery portfolio in UK.
Confidential, 2022-2023		Technical Due Diligence on a hybrid solar, BESS, and diesel power plant at a gold mine



SELECTED REFERENCES

...as well as several market, strategy, regulatory and feasibility studies on BESS

Client	Country	Description
Confidential, 2025		Storage market entry of Italian integrated energy player and development of a detailed roadmap for its BESS and LDES adoption
Confidential, 2025		Regulatory workshops and financial model drafting for a BESS project in Southern Italy
Confidential, 2023		Technical assessment of the options to develop a flow-battery, including pre-sizing, layout, CAPEX and OPEX, and preliminary assessment of the commercial Business Case
Confidential, 2023		Viability analysis of Solar, Wind and BESS Project for a Paper Plant: feasibility study, inc. site study assessment, permitting applications, conceptual design, technology assessment and sizing, fuel study, preparation of financial model and analysis
Multiple projects, 2023		Feasibility study for the installation of a Battery Storage System in different locations in Italy with a focus on the verification of the land constraints
Multiple projects, 2023		Preparation of the documentation for STMG submission for several BESS projects located in Italy
Multiple projects, 2022-2023		Project margins for BESS from DA, ID, FCR and aFRR markets based on fundamental price projections of AFRY and AFRY own BESS optimizer dispatch
Confidential, 2022		Identification of potential project development sites for a 30 MW BESS project using a geo information system-based analysis approach and noise emissions simulation
Large EU TSO, 2021		Review of US and regional solar PV and battery storage markets and commercial DD of the Target's project portfolio
Italian producer, 2020		Pre-Feasibility for potential installation of BESS on existing production sites
Confidential, 2020		Evaluation of battery storages in Italy considering on-site operation with an onshore wind farm vs a standalone case

WHY AFRY?! – ABOUT THE AFRY GROUP

AFRY is a global engineering, design, and advisory company with 19,000 experts serving clients in more than 100 countries across the globe

AFRY AT GLANCE

EMPLOYEES GLOBALLY
(2024)

~ 19,000

NET SALES
(2024)

€ 2.5 bn

NUMBER OF COUNTRIES
WITH OFFICES

> 40

NUMBER OF COUNTRIES
WITH PROJECTS

> 100

AFRY CORE EXPERTISE



Engineering



Design

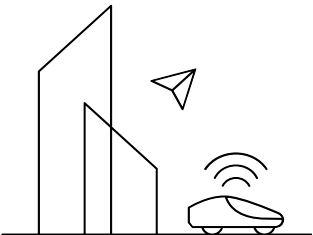


Digitalisation

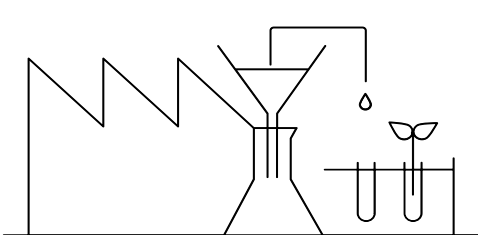


Management Advisory

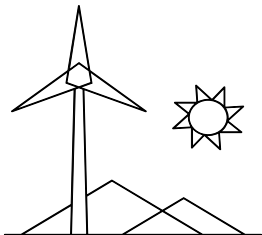
AFRY GROWTH DRIVERS



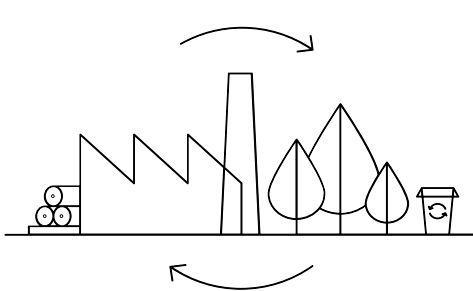
Infrastructure



Food & Life Science



Clean Energy



Bioindustry

Market Analysis sits in AFRY Management Consulting Division (MCD) together with Strategy, Operational & Digital and Transaction Practices

OUR SERVICE AREAS



Strategy Advice



Operational & Digital Transformation

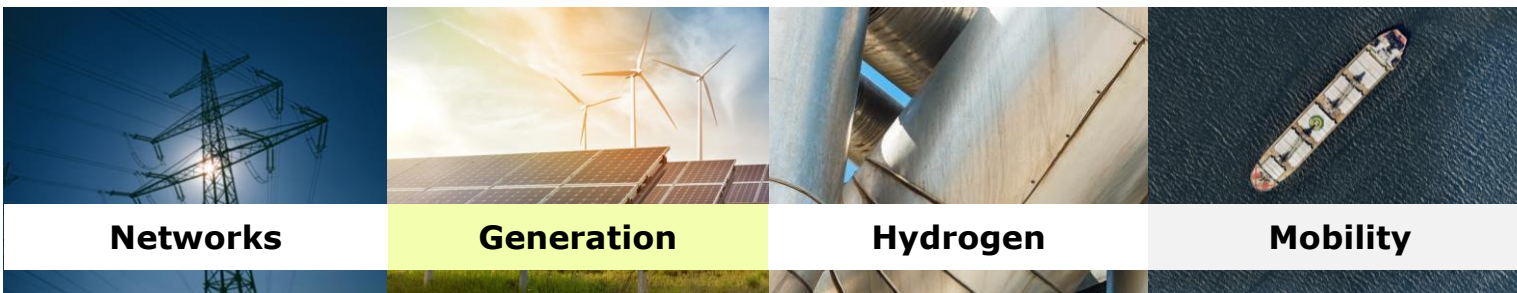


Transaction Services



Market Analysis

SELECTED CONSULTING AREAS IN THE ENERGY INDUSTRY



Networks

Generation

Hydrogen

Mobility

Leading advisor to the energy industry

500+ consultants

Leading **market modelling solutions** and **digital tools**

Strong collaboration with our **industry consulting colleagues**






Close cooperation with the **engineering, design, and digitalisation** teams of the AFRY Group



Bangkok | Beijing | Berlin | Düsseldorf | Dubai |
Gothenburg | Hamburg | Helsinki | Houston | London |
Madrid | Manila | Milan | Munich | New York | Oslo |
Oxford | Paris | Stockholm | Sydney | Vienna | Zurich

We address the energy industry's core challenges with focus on the asset-heavy parts of the value chain

Selected key challenges across AFRY's core areas of energy infrastructure expertise

 Thermal generation	 Renewable generation	 Transmission	 District Heating	 Distribution
Decarbonisation	Greenfield/M&A screening	Cross border integration	Decarbonisation	Growing system responsibility
Utilisation rates	Regulations and commercials	Capacity constraints	Flexibility optimisation	Probabilistic network planning
Flexibility optimisation	Project development and EPC	Grid connection processes	Integration with the electricity sector	Smart meter rollout
Fuel supply automation	Generation planning and forecasting	Probabilistic network planning	Smart meter rollout	Changing regulatory environment
...

Selected system-wide challenges

Data storage, usability, and security	ESG ¹⁾ criteria and certification	Customer requirement changes
Process efficiency and stability	Asset management & maintenance	Consumer behaviour changes
Investment decision complexity	Business model & market actor diversification	System volatility and security

1) Environmental, social, and governance

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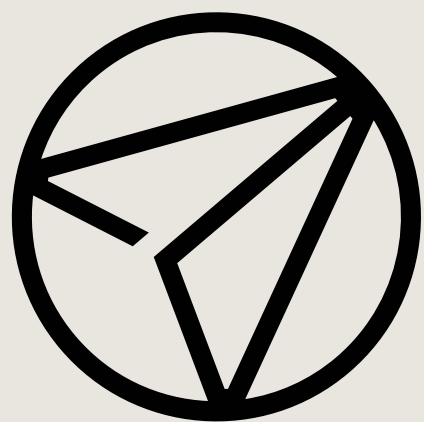


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ABOUT US

AFRY is a European leader in engineering, design, digital and advisory services, with a global reach. We accelerate the transition towards a sustainable society.

We are 19,000 devoted experts in infrastructure, industry, energy and digitalisation, creating sustainable solutions for generations to come. AFRY Management Consulting works globally to address challenges and opportunities in the energy, bioindustry, infrastructure, industrial and future mobility sectors. Our energy practice is the leading provider of strategic, commercial, regulatory and policy advice to energy markets worldwide. Our energy team of over 400 specialists offers unparalleled expertise in the rapidly changing energy markets across Europe, the Middle East, Asia, Africa, Australia and the Americas.



AFRY