

Corporate Banking

# ESNL Event

# ABN AMRO on BESS

4 February 2025



# Agenda and presenters

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## Agenda

- 1 Introduction ABN AMRO
- 2 Financing BESS
- 3 Q&A

## Presenters



**Tomas Mink**

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Senior Associate New Energies

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# Introduction ABN AMRO

# ABN AMRO products and services in the Energy Transition

## ABN AMRO

Geography

Pan - Europe

Clients

Sectors / themes

Digital & Consumer

Mobility & Manufacturing

New Energies

Construction

### Corporate Finance

- M&A Advisory
- Valuations
- Capital Structuring & Advisory

### SIF

- Equity investments
- Junior debt

### ECM

- IPOs
- Follow-On Offerings
- Accelerated Bookbuild Offerings
- Rights Offerings
- Convertible Bonds
- ECM Advisory

### DCM

- Corporate, Project & Green Bonds

### Loan Syndications

- Strong expertise in syndicating from small club deals to large syndicated facilities
- Origination, structuring and syndicating capabilities
- Secondary Trading Desk
- Underwrites and bridges
- Admin. & Agency Services

### European Cash & Liquidity Management

- Account structures
- Payments & Collections
- Liquidity Management

### Expertise & Specialised Lending

- Asset Based Financing
- Corporate Loans
- Project & Infrastructure Finance
- Fin. Institutions Lending

### Markets & Clearing Services

- Energy Derivatives / Commodity Hedging
- CO<sub>2</sub> – Emission Trading

### Export Finance

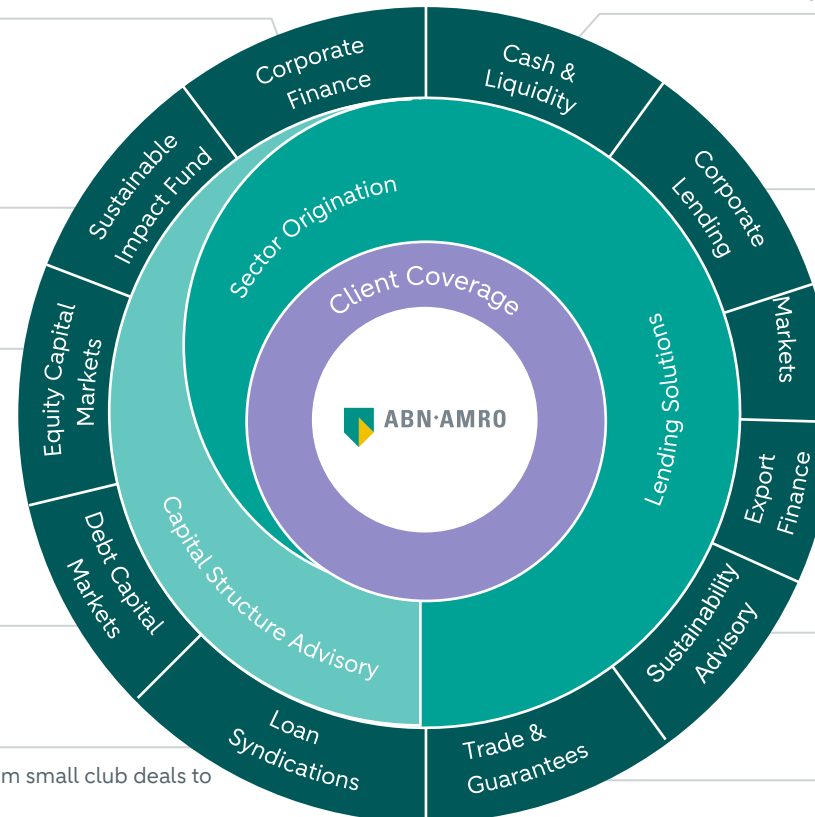
- Dedicated team specialised in ECA covered credit across the globe

### Sustainability Advisory

- Leading advisory team of 8 professionals that have been involved in numerous landmark transactions

### Trade & Guarantees

- Doc-LCs
- SBLCs
- Guarantees



# ABN AMRO has a strong and experienced New Energies team with a European presence to support our clients

## Selected highlights

Over 5m retail clients

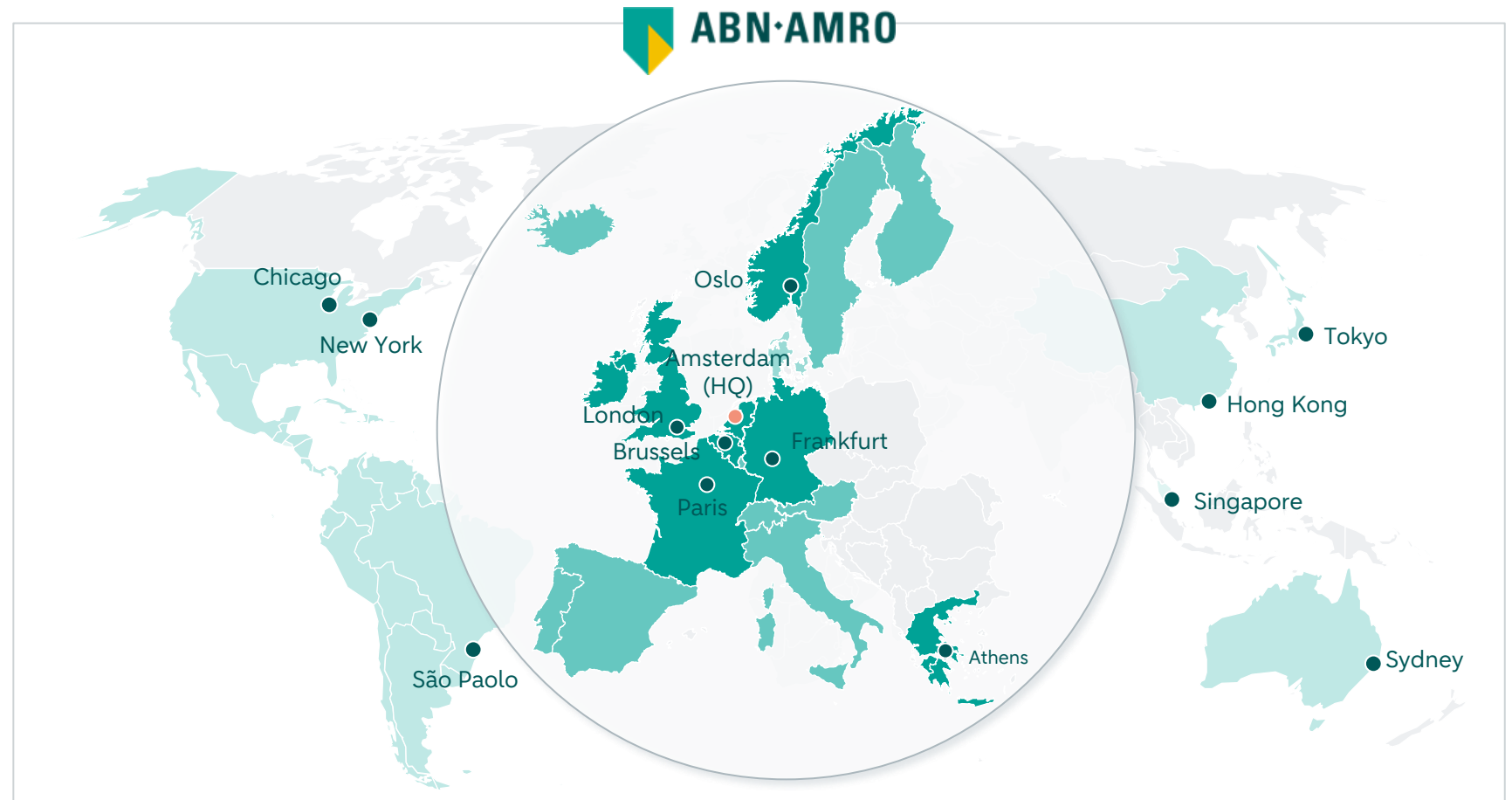
Over 365,000 Commercial Banking Clients

EUR 50.6bn loans to CIB Clients

Private Banking manages over EUR 200bn in Assets

### Legend

- ABN AMRO Office
- ABN AMRO focus geographies
- ABN AMRO (partner) network



# ABN AMRO is strongly committed to the energy transition and in particular the storage sector

## Utilities

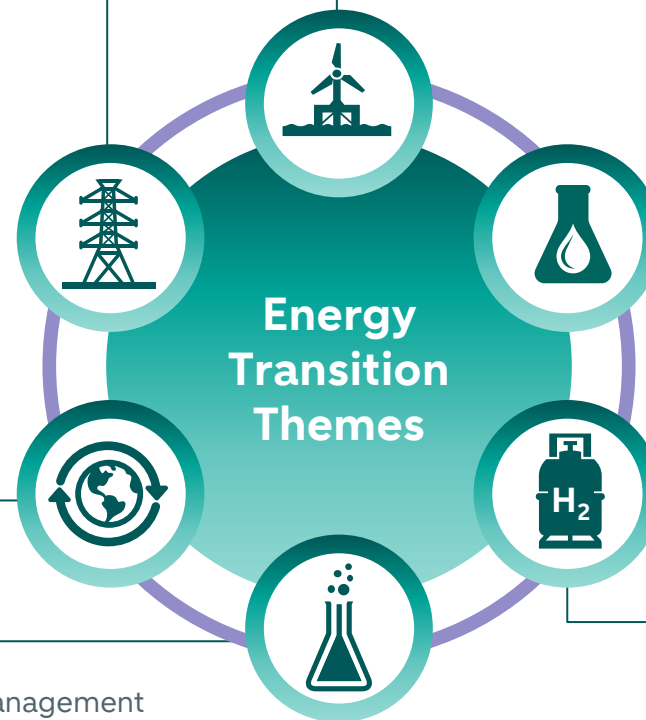
- New regulations target emission reduction and sustainable heating
- Grid companies need equity and debt for energy transition
- Volatile commodity prices strain producers' and suppliers' cash flow

## Energy Services

- Energy service leaders are adding energy transition projects
- Offering carbon capture, storage, and trading services
- Creating exchange-based carbon brokering and clearing solutions

## Circular Economy

- Engaging with plastics and metals recycling and waste management firms
- Focusing on clients in basic materials, chemicals, and recycling



## Storage, EV & Renewables

- Combined M&A, debt advisory, project finance, and ECM
- Coverage in Benelux, DACH, and Nordics
- In-depth research and know-how on stationary battery and EV markets
- Global access to financial and strategic infrastructure investors

## Alternative Fuels























- unique expertise in European advanced biofuels and synthetic fuels
- Active discussions with leading European investors
- Ongoing M&A and capital raising projects with strong ties to European developers

## Hydrogen










- Engaging with pan-European consortia
- Analysing European hydrogen projects
- Overview of hydrogen storage and transport market
- Researching fuel cell applications in various sectors

# ABN AMRO has extensive advisory and financing experience in the BESS and broader energy transition sector

## New Energies Advisory

<p>Fluvius</p>  <p>Adviser on capital raising possibilities for DSO activities</p> <p>Sole advisor to the Seller</p> <p>Belgium   Ongoing</p>	<p>TenneT</p>  <p>Adviser on equity raising for HV investments in Germany</p> <p>Joint advisor to the Seller</p> <p>The Netherlands   Ongoing</p>	<p>Blue Phoenix Group</p>  <p>on the acquisition of</p>  <p>Advisor to the Buyer (M&amp;A and debt)</p> <p>The Netherlands   Pending</p>	<p>Gasunie</p>  <p>Advisor on tender submission to German government for the construction of a multi-bill EUR hydrogen network</p> <p>Sole Financial Advisor</p> <p>The Netherlands   2024</p>	<p>Equitix</p>  <p>acquire a 90% stake in two SPVs for EUR 1.6 billion</p> <p>Sole advisor to Equitix</p> <p>Germany   2024</p>
<p>InfraVia</p>  <p>As advisor on acquiring a majority stake in</p>  <p>Exclusive Financial Advisor to the Buyer</p> <p>The Netherlands   2024</p>	<p>InfraVia</p>  <p>As Debt Advisor on the acquisition of a majority stake in</p>  <p>Exclusive Debt Advisor to the Buyer</p> <p>The Netherlands   2024</p>	<p>Nedstack</p>  <p>The sale of Nedstack Fuel Cell Tech to Carbon Technology Energies and Freudenberg</p>  <p>Sole advisor to the Seller</p> <p>The Netherlands   2024</p>	<p>Avantium</p>  <p>Rights Issue + Upsize Offering EUR 70 million</p> <p>Joint Global Coordinator</p> <p>The Netherlands   2024</p>	<p>Ambrava</p>  <p>Sale of Ambrava to Plieger Groep</p> <p>Sole advisor to the Seller</p> <p>The Netherlands   2024</p>
<p>Alliander</p>  <p>Sale of Kenter by Alliander to APG and OMERS</p>  <p>Sole advisor to the Seller</p> <p>The Netherlands   2023</p>	<p>Solar Concept</p>  <p>Sale of B2C solar installation company to</p>  <p>Sole advisor to the Seller</p> <p>The Netherlands   2023</p>	<p>Stedin</p>  <p>Adviser on its EUR 500 million equity raise from the State</p> <p>Joint advisor to the Seller</p> <p>The Netherlands   2023</p>	<p>NIBE</p>  <p>EUR 640 million acquisition of HVAC company Climate For Life by NIBE</p> <p>Sole advisor to the Buyer</p> <p>The Netherlands   2023</p>	<p>Zelfstroom</p>  <p>Equity raise for rooftop solar PV PAAS offering</p>  <p>Sole advisor to the Seller</p> <p>The Netherlands   2022</p>

## Project and Asset Based Finance

<p>Project Sparkle</p>  <p>Project Financing of a 240MW / 480MWh BESS asset</p> <p>Lender, Hedging Bank, Facility &amp; Security Agent</p> <p>France   2024</p>	<p>Recharge</p>  <p>EUR 180 million financing of EV charging business Recharge</p> <p>Mandated Lead Arranger, Hedging Bank</p> <p>Nordics   2024</p>	<p>Electra</p>  <p>EUR 75 million EV infrastructure project financing</p> <p>MLA and Hedging Bank</p> <p>Belgium   2024</p>	<p>Project Chargon</p>  <p>Stand-alone 45MW/ 90MWh BESS financing in NL</p> <p>Sole Lender, Hedging Bank, Account Bank</p> <p>The Netherlands   2024</p>
<p>Zenobé Fleet</p>  <p>Financing of new eBusses and charging infrastructure</p> <p>MLA &amp; Hedging Bank €676m</p> <p>UK   2024</p>	<p>Recurrent Energy</p>  <p>Green multi-currency facility up to EUR 1.3 billion for solar PV and BESS projects</p> <p>Mandated Lead Arranger, Hedging Bank</p> <p>Europe, UK   2024</p>	<p>Voet</p>  <p>1-to-1 Financial Lease</p> <p>ABF Financier</p> <p>The Netherlands   2023</p>	<p>Greener</p>  <p>1-to-1 Financial Lease</p> <p>ABF Financier</p> <p>The Netherlands   2023</p>
<p>Bredenoord</p>  <p>Portfolio financing Borrowing Base Facility</p> <p>ABF Financier</p> <p>The Netherlands   2023</p>	<p>Project Franklin</p>  <p>Two 200MW / 400 MWh grid-scale energy storage facilities in Scotland</p> <p>Adviser to the Seller</p> <p>UK   2023</p>	<p>Super B Lithium Power</p>  <p>ABF factoring line</p> <p>ABF Financier</p> <p>The Netherlands   2023</p>	<p>Project Verdant</p>  <p>Financing of co-located PV and BESS assets</p> <p>Mandated Lead Arranger, Hedging Bank</p> <p>UK   2023</p>

# 2 Financing BESS



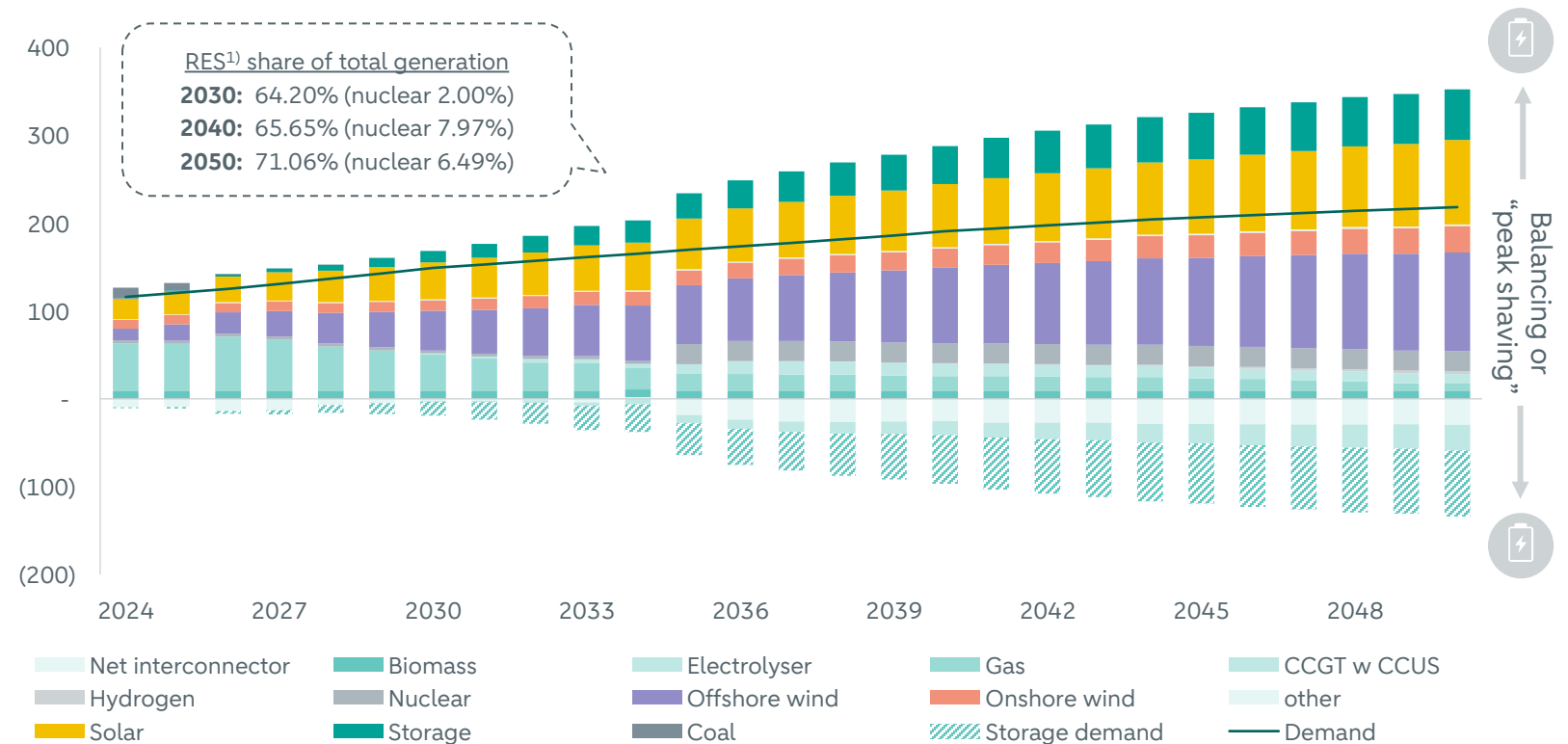
# Coal and (eventually) gas production to be phased out, shifting electricity supply to RES, driving the need for storage

## Background

- Coal generation is expected to decline in the near term due to accelerated asset retirement and rising carbon prices
- Unabated gas generation will increase in the 2020s to offset reduced coal and lignite generation, peaking in 2026 before declining due to higher carbon prices and more renewables
- In the early 2030s, the rise of gas with CCUS will reduce the need for unabated gas, impacting CCGT load factors
- By the late 2030s, hydrogen will serve a peaking role, but high fuel costs will limit its load factors, restricting its use to times of low renewable output and peak demand

## Generation and demand of electricity

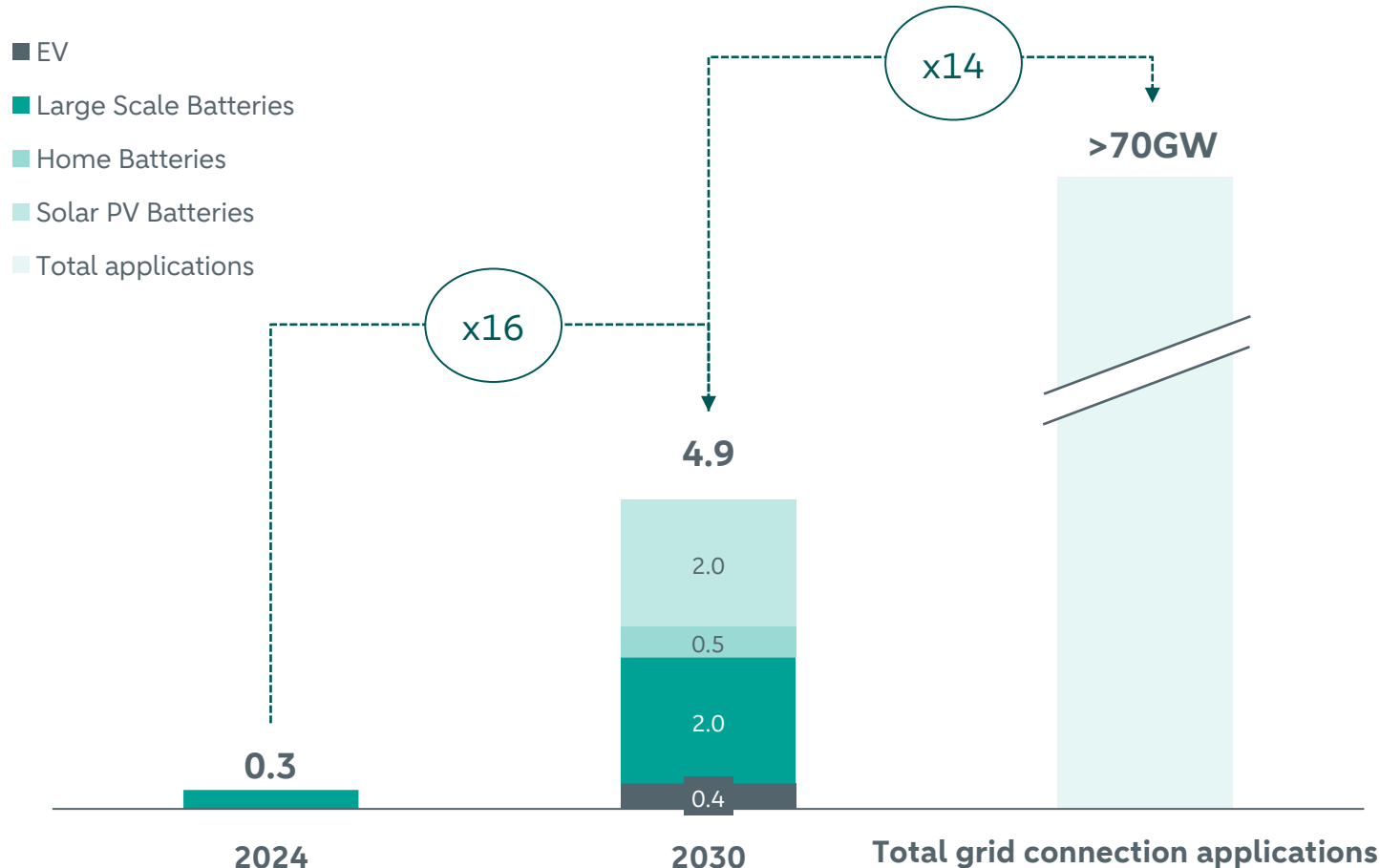
Generation and demand of electricity in Netherlands (TWh p.a.)



1) Hydrogen, Solar, Biomass, Offshore / Onshore wind  
Sources: Timera, Rystad ScenarioCube, ABN AMRO Analysis

# Despite >70GW of grid applications, TenneT expects battery storage to reach 5GW by 2030, acknowledging short-term economic challenges

## Anticipated installed battery storage capacity by 2030 (GW)



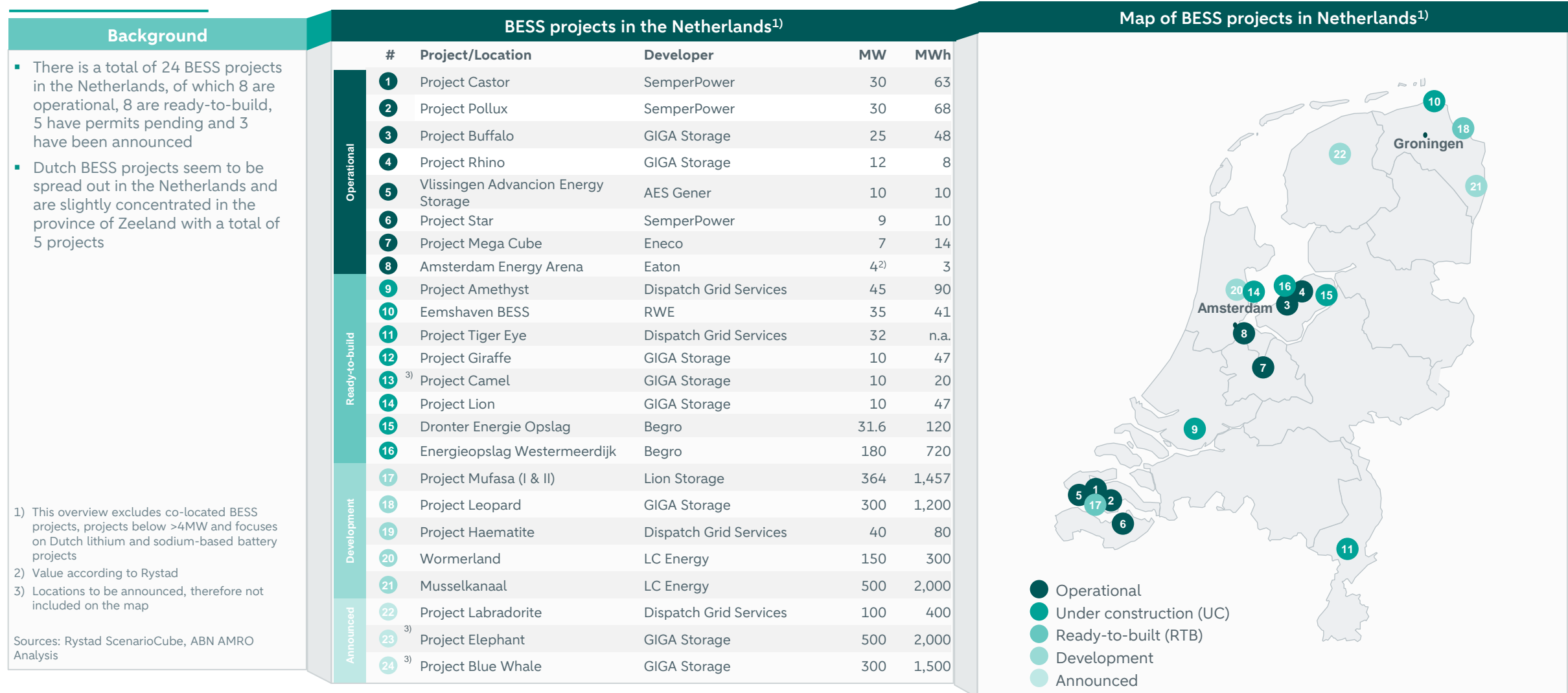
## Key drivers

- Costs of lithium-ion batteries have decreased, but high grid fees challenge storage tech in the Netherlands
- Policies reducing grid fees could boost large-scale battery adoption, with increasing capacities expected due to decreasing CAPEX and reduced thermal capacity
- Although TenneT originally foresaw 19.3GW (6.6GW behind-the-meter, 9GW stand-alone, 3.7GW co-located) of BESS is needed by 2030, an Economic Viability Assessment (EVA) suggests 4 GW likely viable and 1 GW potentially viable by 2030
- Economic viability of batteries is limited in 2028 but expected to improve significantly afterward
- Economic viability improves over time with ongoing battery cost reductions and higher market revenues, with stronger growth expected post-2030
- Home storage may become profitable post-2030 with net metering phase-out









# To maximise revenues, batteries must optimise across a variety of markets with different gate closure times

Stacking possibilities		Description	Steps to determine option value	
Balancing market	FCR – Frequency Containment Reserve	<ul style="list-style-type: none"> <li>Measure to secure grid stability</li> <li>Flexibility providers get revenue through capacity payments</li> <li>TSOs are in charge of procuring capacity</li> </ul>		08:00 D-1
	aFRR – Automated Frequency Restoration Reserve	<ul style="list-style-type: none"> <li>Exists to ensure grid stability, gets activated after the FCR</li> </ul>		09:00 D-1
	mFRR – Manual Frequency Restoration Reserve	<ul style="list-style-type: none"> <li>MFRR in contrast to aFRR is activated manually or semi-automatically by the TSO</li> </ul>		12:00 D-1
Wholesale market	Day Ahead	<ul style="list-style-type: none"> <li>Platform to buy and sell power to meet demand</li> <li>Every hour and is contracted one day before delivery</li> </ul>		12:00 D-1
	Intraday	<ul style="list-style-type: none"> <li>Platform to buy and sell power to meet demand</li> <li>Every hour and continuous trading of 15-min delivery</li> <li>Repair errors of the day-ahead market</li> </ul>		4ha – 1ha
	Imbalance market	<ul style="list-style-type: none"> <li>Market to adjust for difference in planned production and actual consumption</li> <li>Managed by TSO</li> </ul>	<15mins	

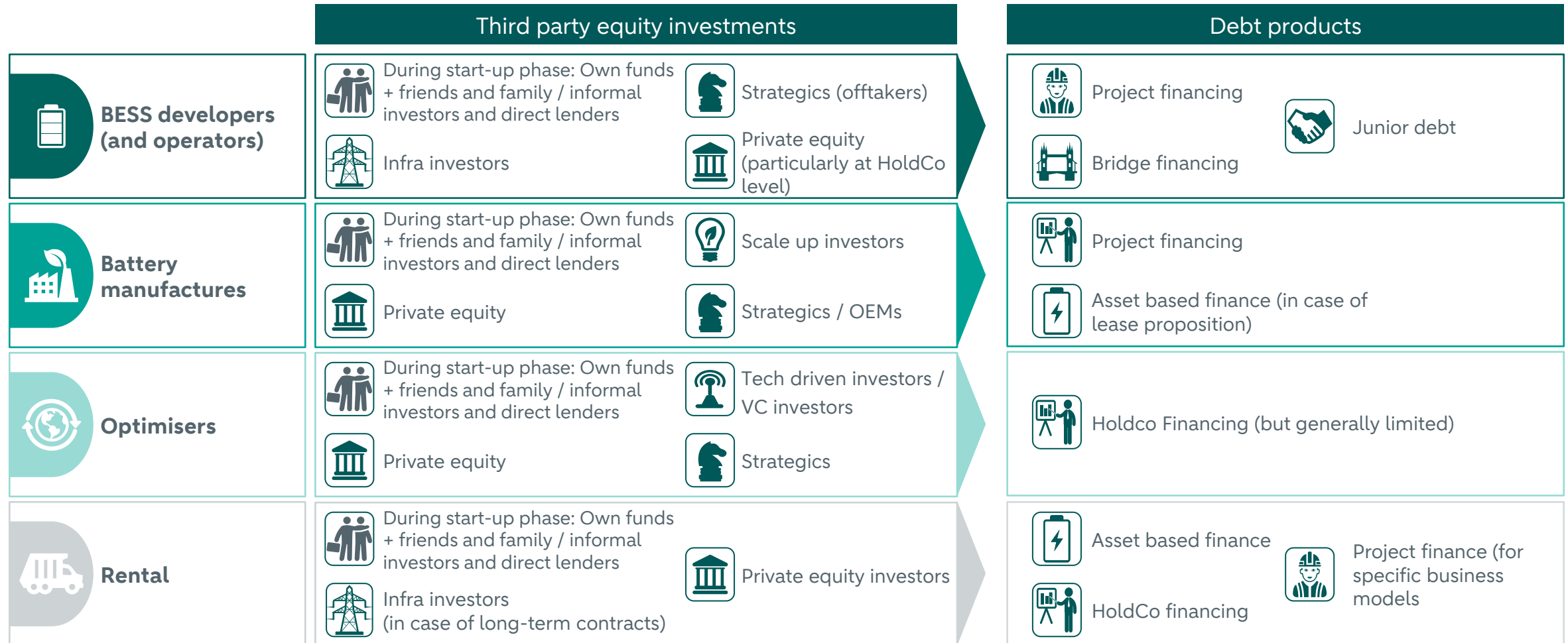
# Selective overview of (larger) stand-alone BESS projects in the Netherlands













# Different propositions in the BESS sector have differing cash flows ...

	Cash flow characteristics	Key Benelux players
 <b>BESS developers (and operators)</b>	<ol style="list-style-type: none"> <li>1 Project development</li> <li>2 Infrastructure (like) contracted revenue streams</li> <li>3 Capex intensive project pipeline</li> </ol>	
 <b>Battery manufactures</b>	<ol style="list-style-type: none"> <li>1 Tech-heavy, capex intensive manufacturing and strong supply chains required</li> <li>2 Subject to geo-political forces and policies</li> <li>3 Europe mostly focused on assembling with key components / material sources from China</li> <li>4 Sale prices decreasing due to innovation and raw material decreases / margins under continued pressure</li> </ol>	
 <b>Optimisers</b>	<ol style="list-style-type: none"> <li>1 Tech-enabled high growth IT platform as key asset</li> <li>2 In ramp-up phase cash flow negative vs more mature business with healthy margins over time</li> </ol>	
 <b>Rental</b>	<ol style="list-style-type: none"> <li>1 Business model project driven and capex intensive</li> <li>2 Uniformity in asset base (brand, technology etc.), credit profile of counterparties, alternative use are all key determinants for financeability</li> <li>3 Potential for infrastructure (like) contracted revenue streams</li> </ol>	

# ... which each require risk-return tailored equity and debt financing instruments

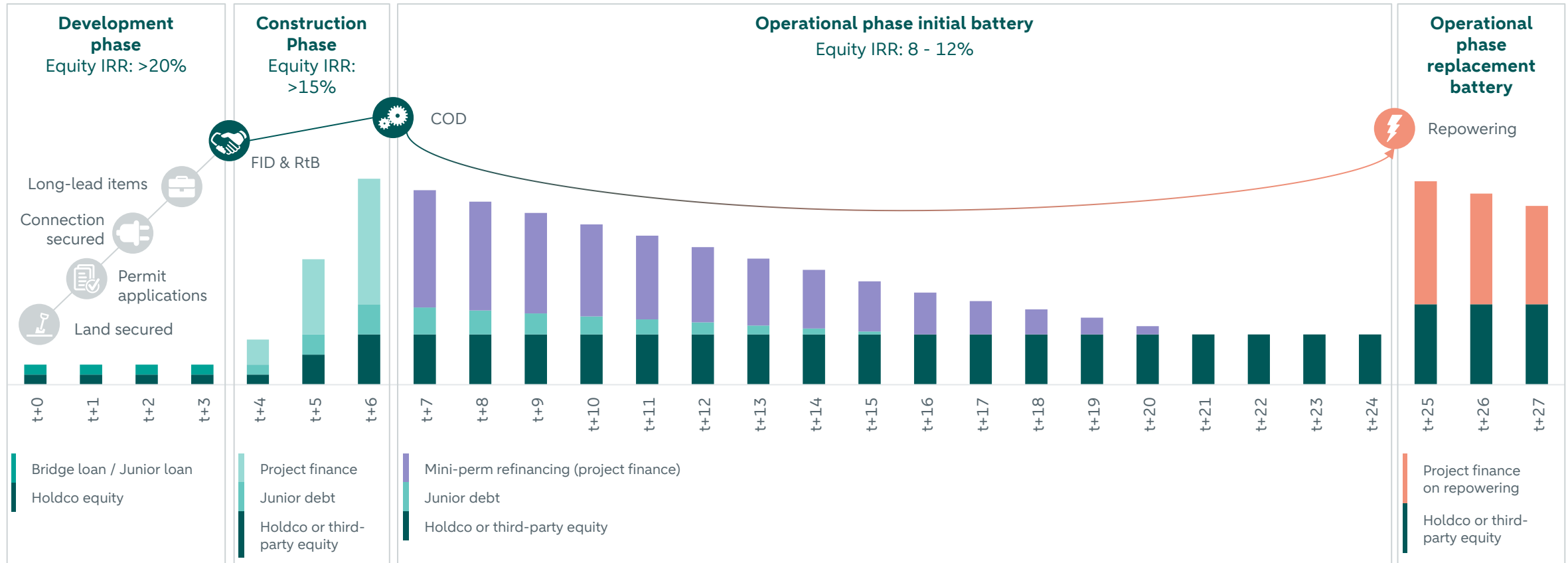


# Debt products vary strongly in pricing, phasing, quantum and requirements

Debt product	Business model and phase	Perimeter	Pricing / interest	Quantum/size	Tenor/duration	Structure characteristics
 <b>Bridge loan</b>	Early-stage BESS development	Development of project	€€€€€		<2 years	<ul style="list-style-type: none"> <li>• Repayment via e.g. project finance</li> <li>• Used to finance grid connection fees and long-lead items</li> </ul>
 <b>Junior debt</b>	Development and construction BESS	Corporate holding or project level	€€€€€		> 5 years	<ul style="list-style-type: none"> <li>• Subordinated to senior debt</li> <li>• Typically interest roll-up during construction</li> <li>• Equity like instrument avoiding common equity dilution</li> </ul>
 <b>Project finance / mini-perm refi</b>	Construction phased BESS	Project capex roll-out	€		10-20 years	<ul style="list-style-type: none"> <li>• Cash sweeps may apply</li> <li>• Nonrecourse financing</li> <li>• Refi at COD at improved terms</li> </ul>
 <b>Holdco financing</b>	EBITDA generating operational business	Corporate holding	€€		5 – 7 years	<ul style="list-style-type: none"> <li>• Leverage finance at x EBITDA</li> <li>• More expensive than project finance or asset based finance</li> <li>• Can facilitate further growth through capex facility</li> </ul>
 <b>Asset based financing</b>	Non-project based BESS assets lease, LaaS	Asset or asset fleet	€		2 – 10 years	<ul style="list-style-type: none"> <li>• Legal asset ownership transferred to bank (via financial lease)</li> <li>• Annuity repayment profile</li> <li>• Typically between EUR 70k – 250k per asset</li> </ul>

# For BESS development, different types of funding are attracted over its lifecycle phases

Funding over the project lifecycle (indicative quantum p.a.)





# Various lease propositions can be used to fund non-project based battery assets depending on the business model

## Key figures



**~16,000**  
customers

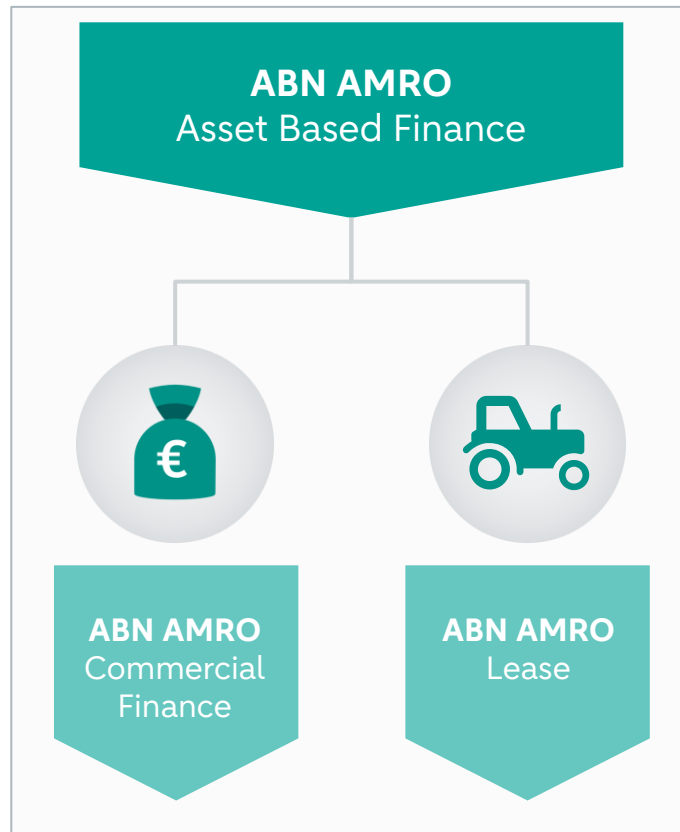


**9.4 bn**  
portfolio



**736**  
employees

## Structure



## Options lease based financing structures

1

**Sell +  
Maintenance**

**Direct lease**

- Standard financing structure on end client

2

**(Long-term) Lease +  
Maintenance**

**Sale of Receivables**

- Contract based financing

**Lease to book value**

- Bulk financing for rental fleets

3

**Own and (short-term) rent  
out**

**Sale of Receivables**

- Contract based financing

**Lease to book value**

- Bulk financing for rental fleets

4

**Own and charge per  
MWh (PAAS) / Offtake  
agreement**

**Lease to book Value**

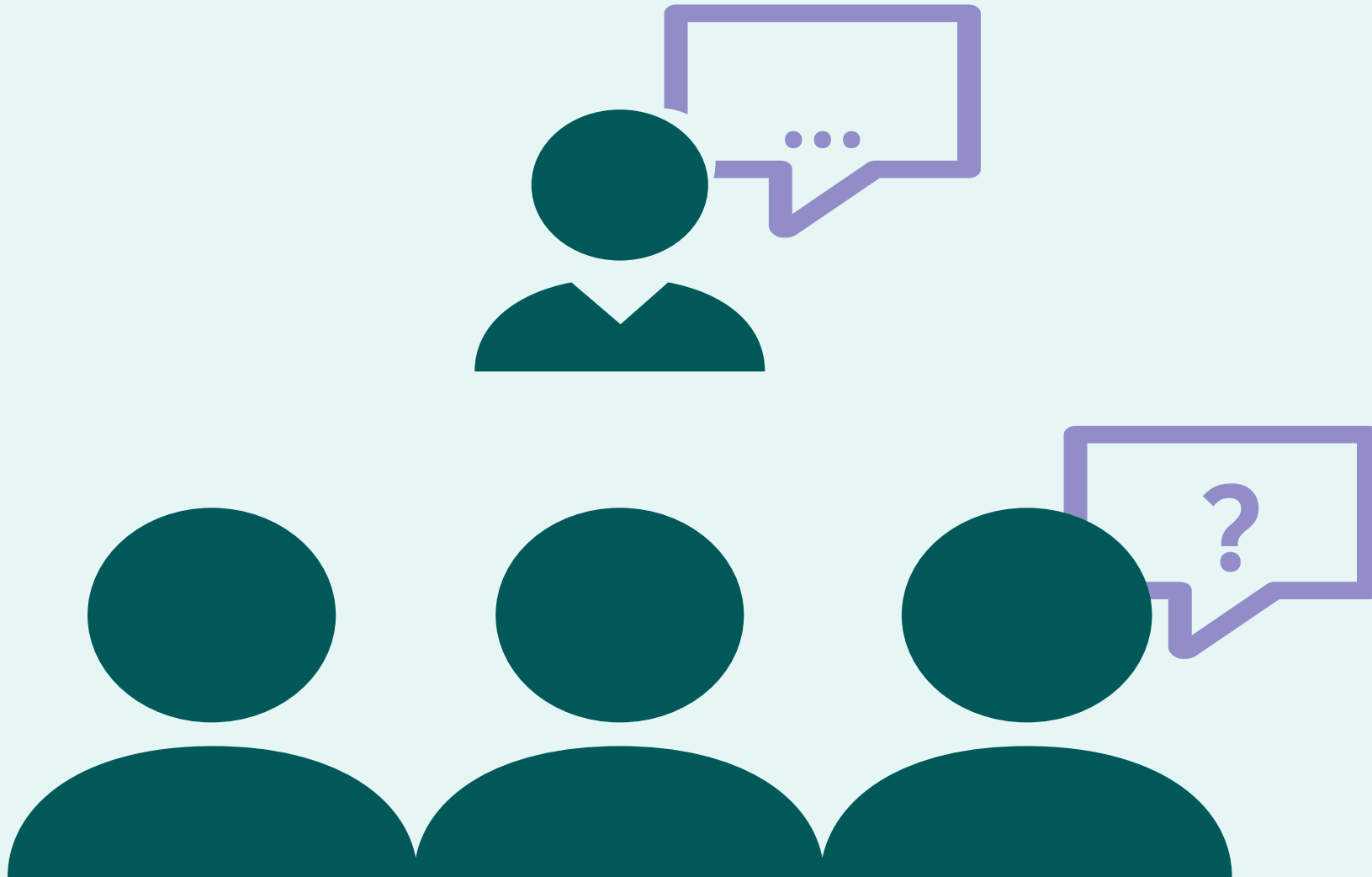
- Bulk financing for rental fleets

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Q&A

# Q&A

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