

BMO Radicle – Voluntary Carbon Markets

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BMO Radicle



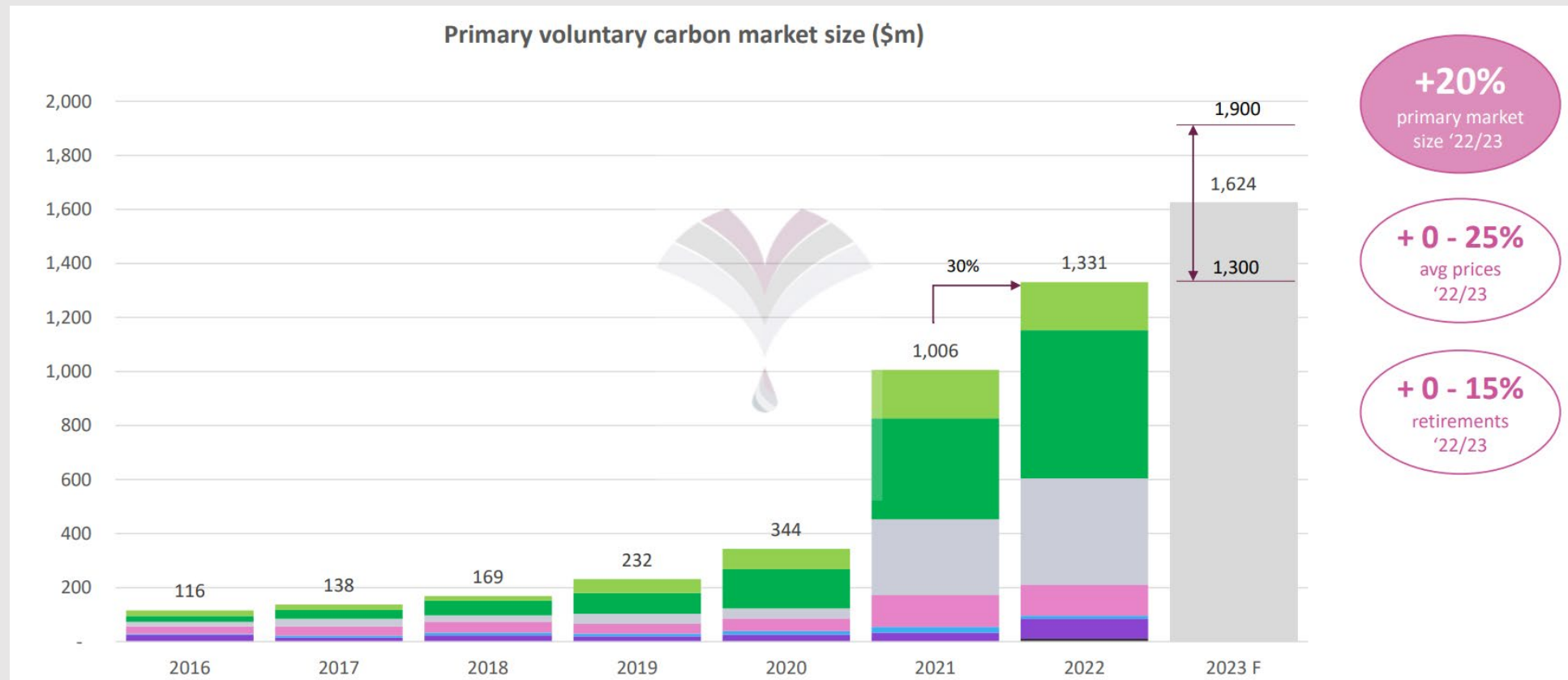
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\$Value of the VCM



Source: Trove Intelligence (18 January 2023)

The VCM Ecosystem

Buy-side

Sales-side

Supply-side

Corporates:

Buy and retire credits to achieve climate commitments, e.g., net-zero pledges



Governmental Institutions and NGOs:

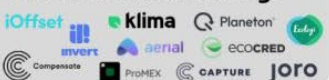


Decarbonization Platforms:

Offer offsetting in addition to their core business, e.g., carbon accounting or green fintech



Individuals and Subscription-Based Mobile Offsetting:



Brokers:

Procure and transfer or retire credits from a trader on behalf of a client. Charge a commission and do not necessarily take credit ownership



Marketplaces and API Providers:

Enable credit transactions by hosting a marketplace and/or API services to directly bridge end-buyers to registered credits



Advance Market Commitments:

Enter or offer pre-purchase/offtake agreements to mobilize capital toward projects at pre-credit stage



Tokenized Credits:

An entire ecosystem for credits moved onto the blockchain has arisen



Exchanges:

Provide trading infrastructure



Meta-Registries:

Integrate multiple registry systems and display credits through a decentralized and shared metadata layer



Traders:

Buy large credit batches from suppliers and sell them in bundled portfolios, usually for a commission



Standards and Registries:

Provide a set of independent methodologies to certify projects and issue credits, which are hosted and/or displayed in a registry



Governance and Accreditation:

Provide guidance through principle frameworks and endorse compliant Standards or corporates with quality labels



Third-Party Auditors (also known as VVBs):

Independently verify a project's climate impact against a Standard's methodology



Direct Sales:

Host and sell credits without an intermediary



Project Proponents:

Own and operate an emissions avoidance, reduction, or removal project



Project Developers and Aggregators:

Have the legal right to carry out an owner's project and claim carbon credits

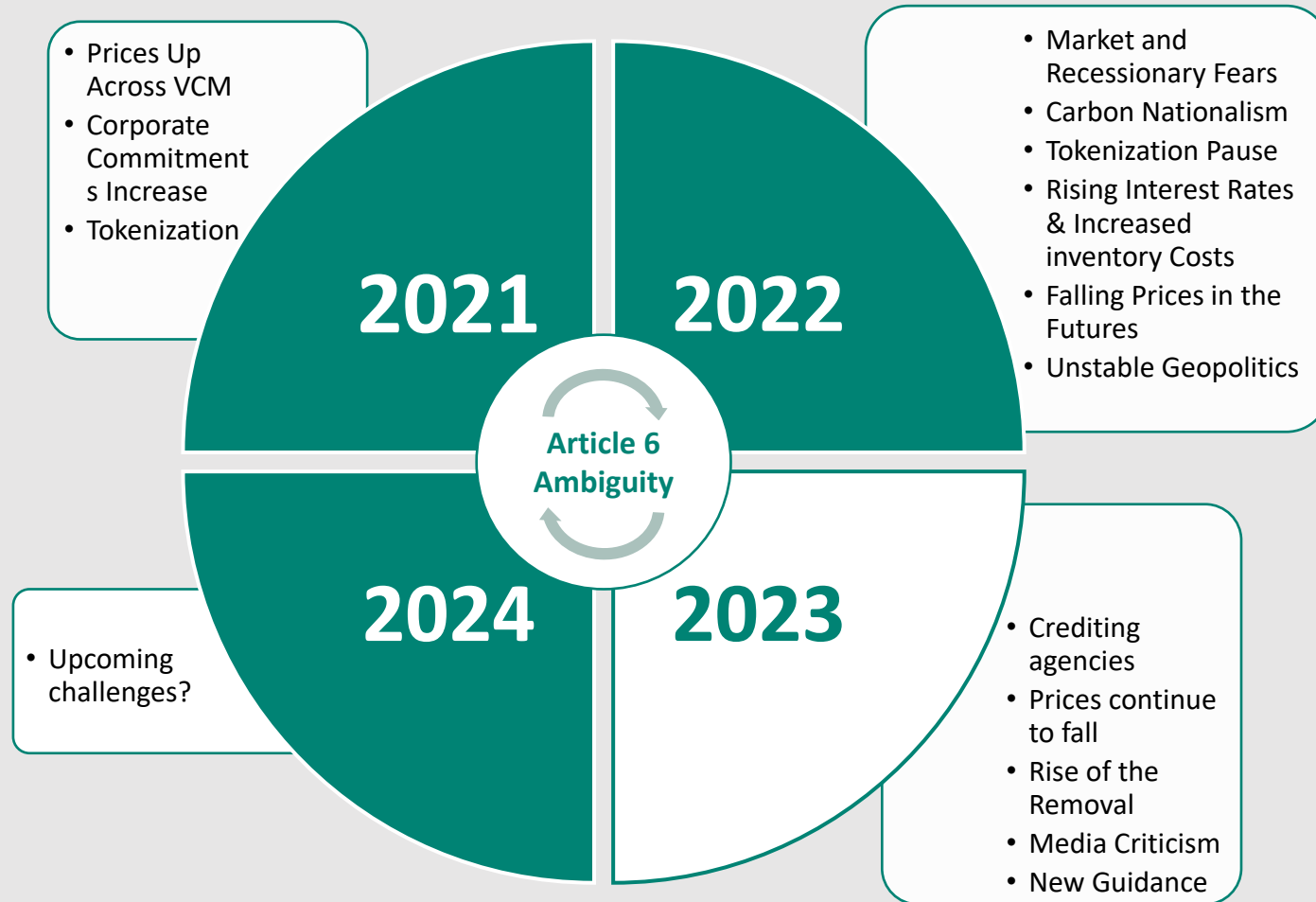


Financing and Advisory:




Deploy resources to projects; at times with brokering and development arms



Evolving Challenges



Guidance Bodies

| Guidance Body | Positions | Next Steps |
|--|--|--|
|  | <p>SUPPLY SIDE</p> <ul style="list-style-type: none"> Released their Core Carbon Principles (CCPs) and Registry level Assessment Framework There will be a second release for the Credit level Assessment Framework | <ul style="list-style-type: none"> Q2-3 '23 release of final Assessment Framework Registries can currently register to be CCP approved |
|  | <p>DEMAND SIDE</p> <ul style="list-style-type: none"> Released their finalized claims code of practice Proposed a three-tier structured approach to claims No longer using carbon neutrality – moved closer to “climate contributions” and Beyond Value Chain Mitigation (BVCM) | <ul style="list-style-type: none"> Will continue releasing additional modules, including additional “on ramp” tiers throughout summer until November 2023 |
|  | <p>NET ZERO FRAMEWORK</p> <ul style="list-style-type: none"> Since 2020, SBTi has been the Net Zero north star for many large corporates Negative general view to offsets. Removals only stance for offsetting purposes. Released consultation on BVCM which would allow for offsetting outside of one’s value chain | <ul style="list-style-type: none"> Consultation on BVCM runs until July 30th SBTi will release paper on BVCM in Q4 '23 |

Article 6 – VCM and Country Actions

| Article 6 Decisions | Impact to VCM | Timeline for Updates |
|---|--|---|
| <p>Article 6.2 –</p> <ul style="list-style-type: none">• Reaffirming processes & reporting• Remaining: Application of corresponding adjustments, eligibility of avoidance activities, use of international registry | Minimal as this is country to country trading. | Operational |
| <p>Article 6.4 –</p> <ul style="list-style-type: none">• Determined the “other” use of the 6.4 ERs, known as mitigation contribution of emission reductions (MCERs), the crediting start periods, and the use of CERs for first NDC• Remaining: CDM Transition Framework, CDM methodologies, decisions on avoidance and removals methodologies | Currently minimal impact to the VCM, however once decisions are finalized, we will see a greater impact to the VCM, especially initially with CDM credits approved for use towards first NDCs and the use of MCERs for voluntary purposes. | Late 2023/2024, expected launch in 2025 |

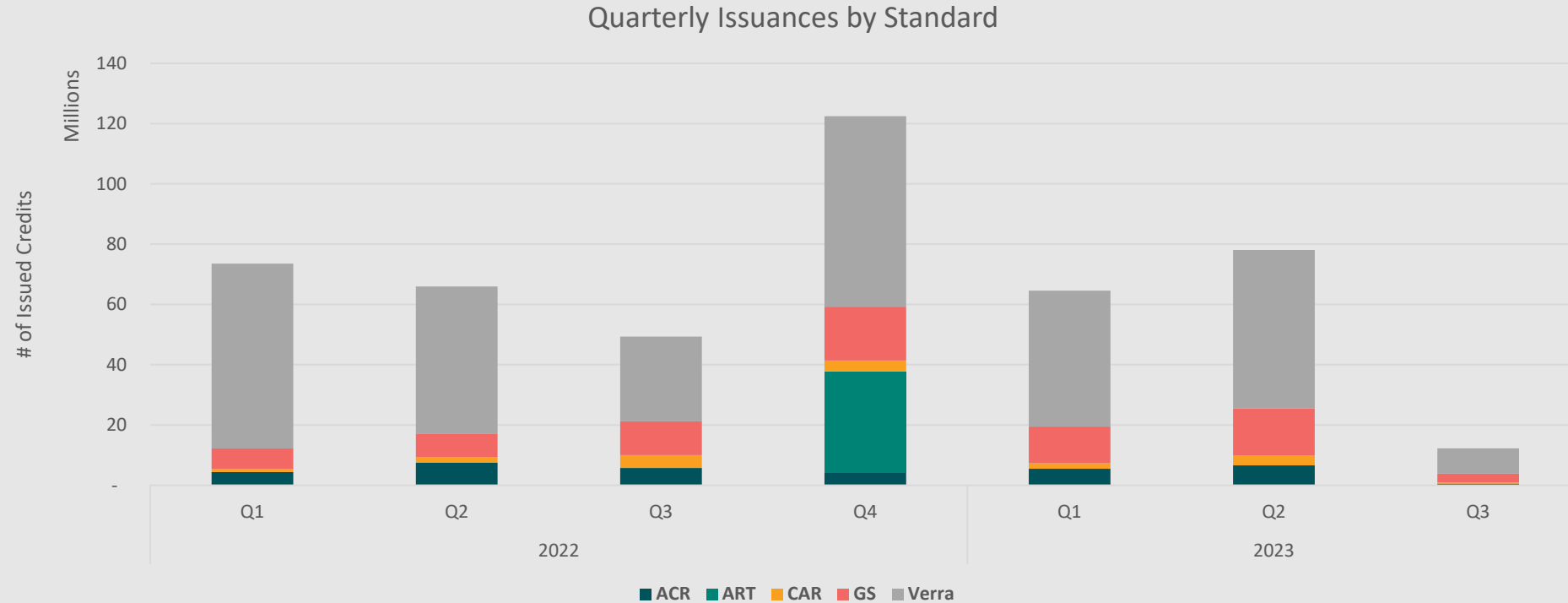
Credit Moratoriums & Sovereign Credits



| Moratorium Countries | Timelines for Updates |
|----------------------|-----------------------|
| Papua New Guinea | August 2023 |
| Indonesia | Q3 '23 |
| Zimbabwe | Q3-Q4 '23 |
| Honduras | N/A |

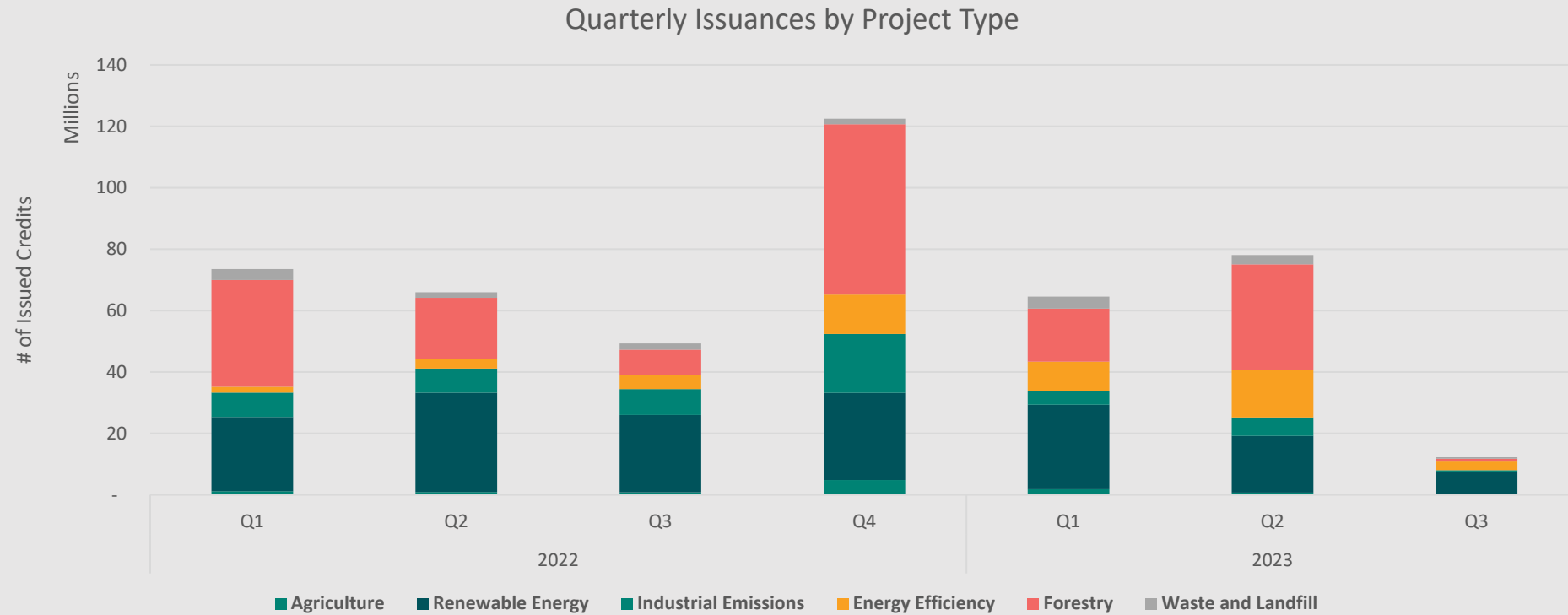
| Sovereign Credit Countries | Total Issuance Expected |
|----------------------------|-------------------------|
| Gabon | 90M |
| Papua New Guinea | 9M – (20,000 sold) |
| Honduras | 957k |
| Belize | 5.6M |

Issued Supply - Standards



Source: ACR, ART, CAR, GS, VCS

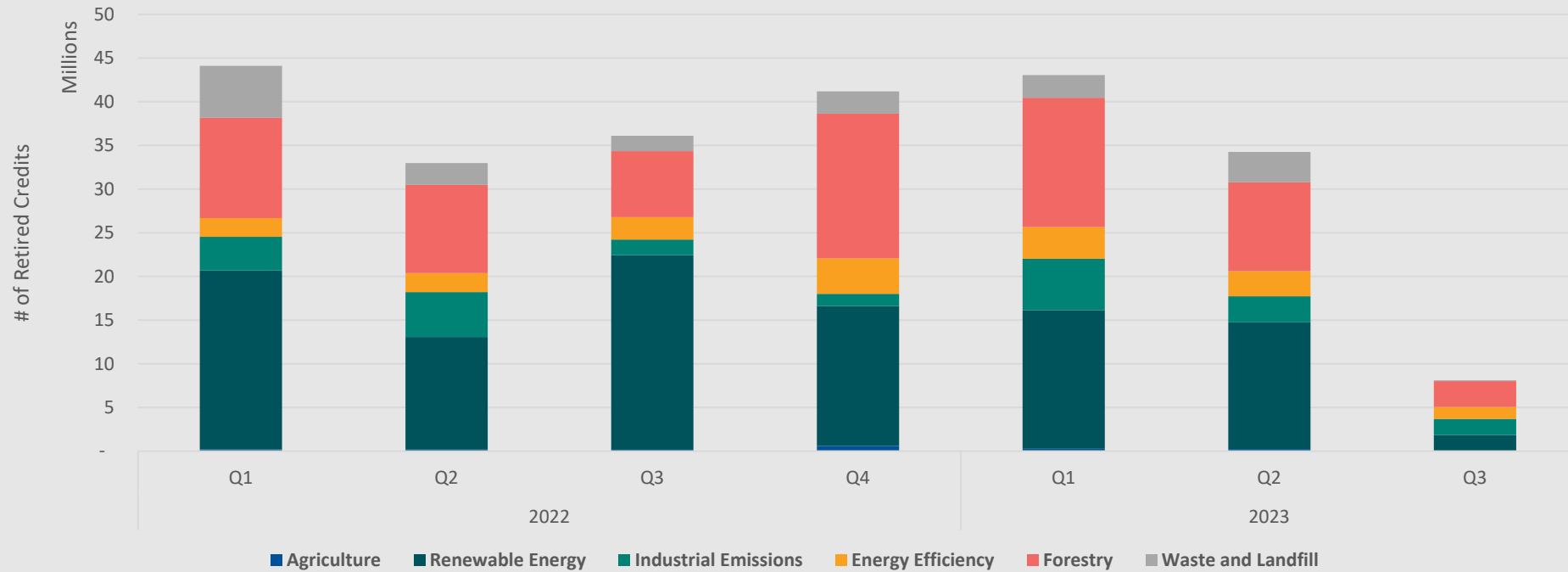
Issued Supply – Project Types



Source: ACR, ART, CAR, GS, VCS

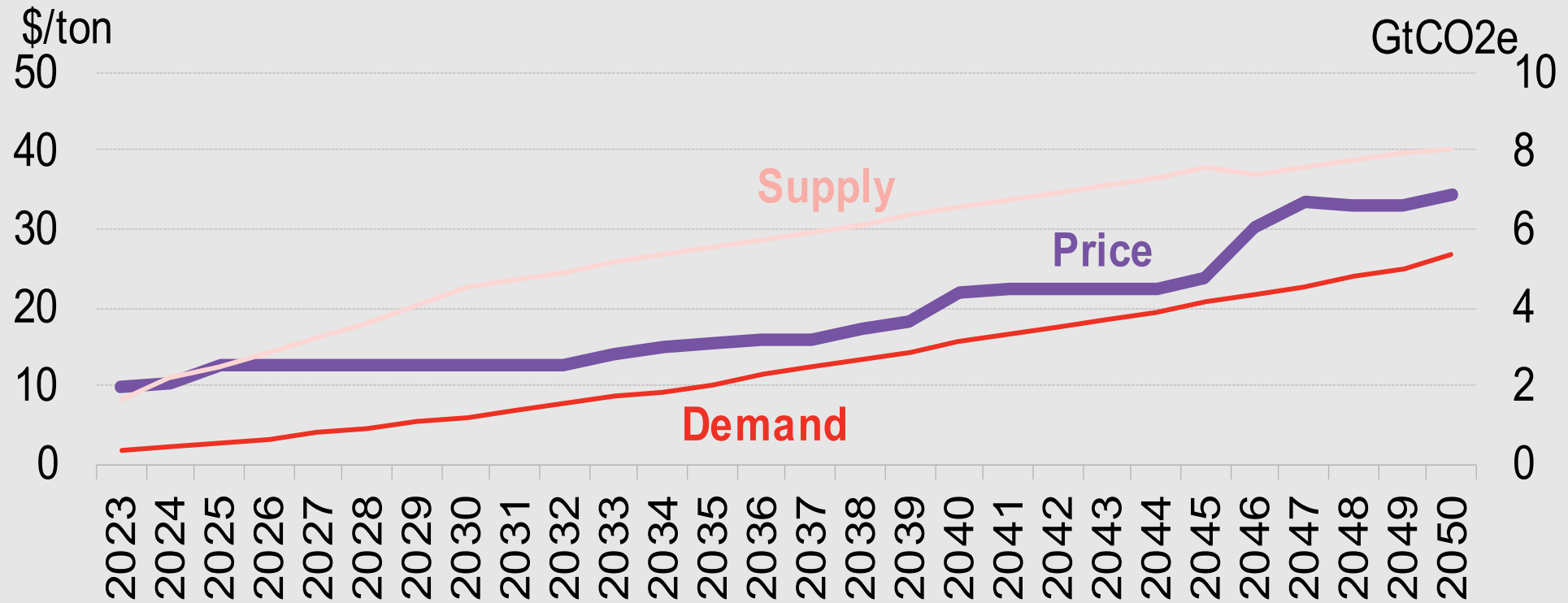
Retirements

Quarterly Retirements by Project Type



Source: ACR, ART, CAR, GS, VCS

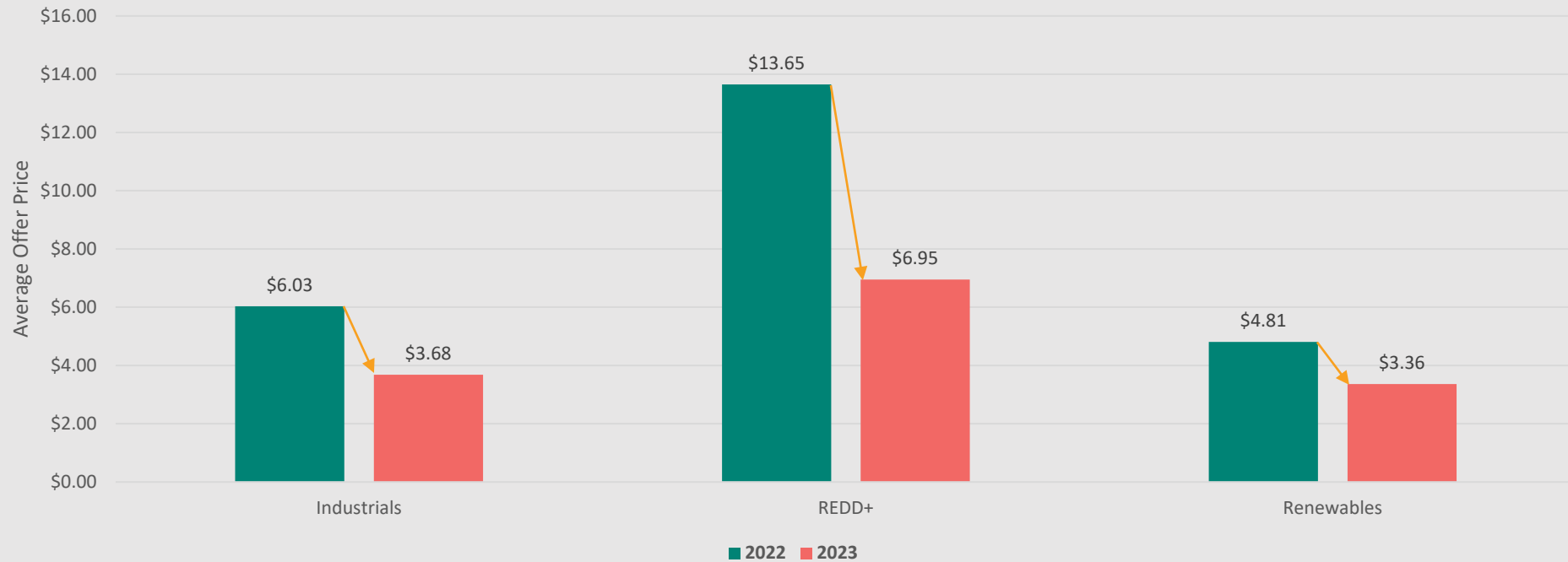
Supply & Demand Forecast



Source: BloombergNEF Note: Chart uses BNEF's baseline assumptions.

Price Trends

July Average Offer Prices by Project Type



All prices are representative of vintage 2019 credits

Thank you!

Questions?



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