

COLLABORATION FOR TRANSFORMATIVE DIGITAL CLIMATE INNOVATIONS

Stocktake Report and Next Strategy for the Climate Chain Coalition



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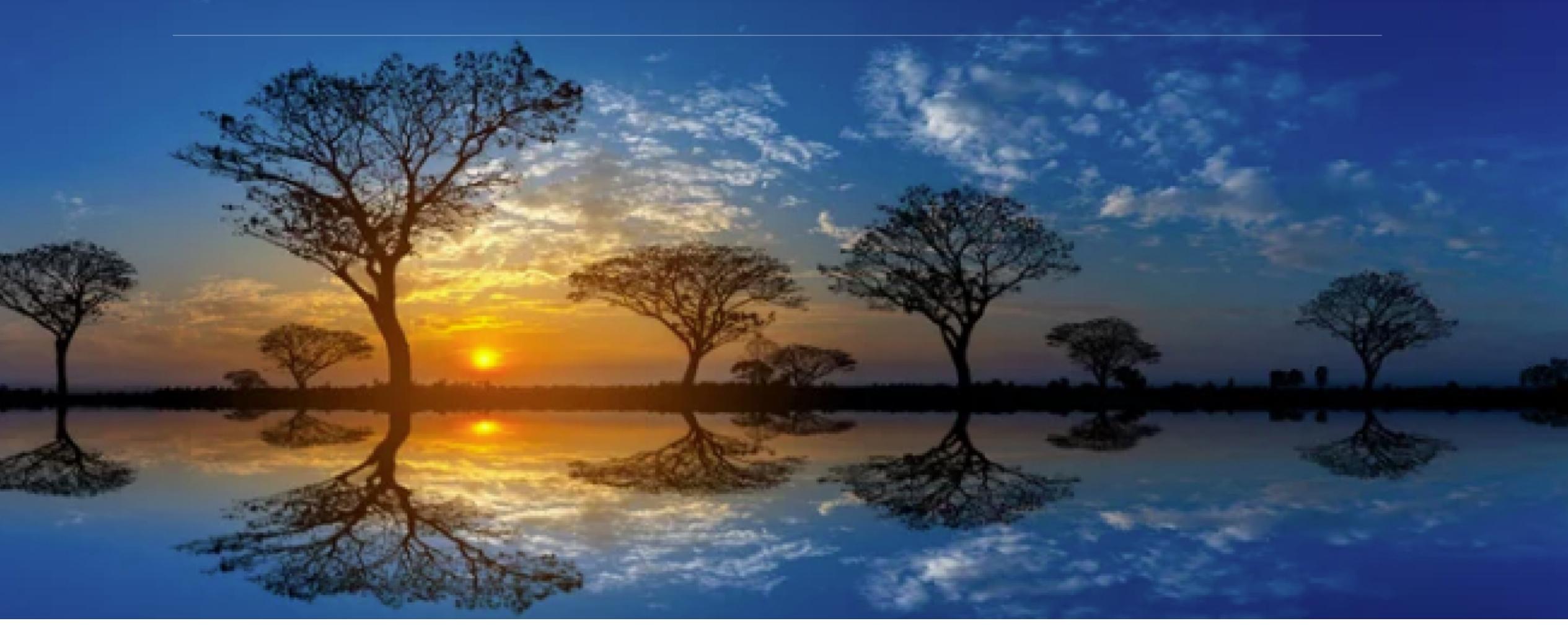
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WELCOME MESSAGE

COLLABORATION FOR TRANSFORMATIVE DIGITAL CLIMATE INNOVATIONS

On behalf of CCC members, we are excited to share this report highlighting CCC membership activities and plans for our future. From the CCC's founding by 12 organizations in 2017, the CCC has grown to 360+ organizations in 69 countries as an open global multi-stakeholder network. This report is a testament to what has been accomplished by the goodwill and dedication of CCC Members and Partners to collaborate for the development and implementation of digital innovations for climate actions.

CCC Members and Partners have contributed to research and publication of various reports on digital innovation for climate, helped co-launch new climate-focused groups within digital communities, and have been active at many events - UNFCCC COPs, World Bank Innovate for Climate conferences, Climate Weeks, as well as many regional and online events. In 2021 at COP26, the CCC became an accredited official observer organization to the UNFCCC. At COP27, the CCC is partnering to co-host the Digital Innovation Pavilion as well as a series of events and activities highlighting CCC member activities on a range of key issues.

WELCOME MESSAGE 02



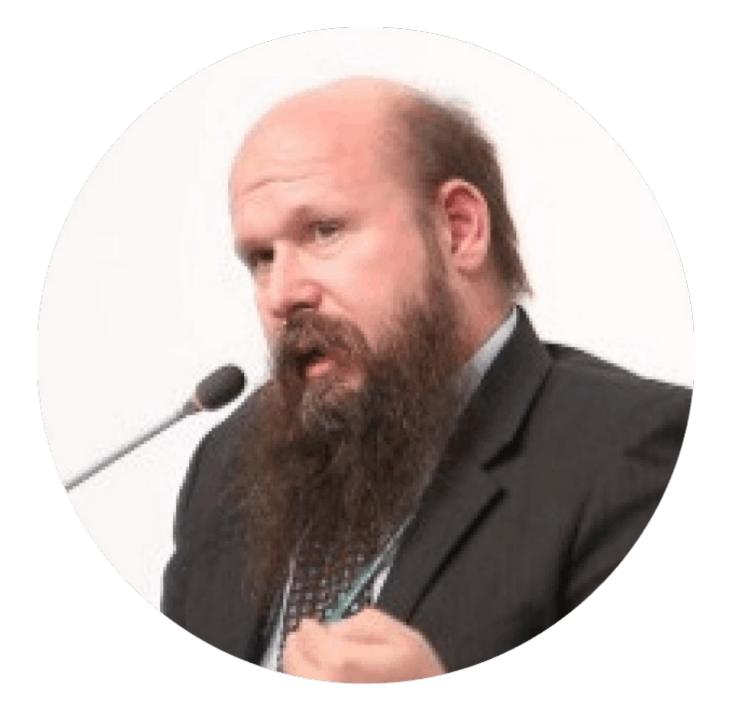
This report shares insightful information about the extraordinary global diversity of CCC members' interests and capabilities regarding their priorities in the use of digital innovation for climate:

- Types of applications (finance, MRV, mitigation, adaptation, registries...)
- Priority Issues and Sectors (energy, waste, agriculture, natural ecosystems, infrastructure...)
- Priority Stakeholders and Users (government, industry, supply chains, urban, rural...)
- Priority Market Geographies (Europe, North America, Asia, Africa, Latin America, Oceania)
- Types of blockchain (Ethereum, Hyperledger, IOTA, Stellar, proprietary...)

The CCC is grateful for the support from the UNFCCC Secretariat, serving as CCC co-chair for the first 5 years, and also the valuable collaborations over the years with other UN organizations, with the World Bank, as well as related initiatives that want to realize the potential of digital innovations for climate action. The CCC looks forward to continue collaborating with the UNFCCC via the UN Global Innovation Hub.

However, CCC members recognize there is a great need to intensify collaboration towards co-leading and cocreating the various forms of innovations for a shared data and digital infrastructure supporting ambitious climate actions to achieve the goals of the Paris Agreement and beyond. We encourage you to read through this report and become familiar with our future plans to amplify collaboration via boosted initiatives such as the Digital Innovation Pavilion launching at COP27, and new Climate Chain Labs to help manage and accelerate development and deployment of solutions.

The CCC will continue to be a 'big tent' global network to welcome newcomers interested in emerging technologies and digital innovations for climate action, and we will build on our growth into 360+ organizations over our first 5 years as we move forward into the next 5 years of accelerating changes geared towards a more sustainable world.



Sincerely and with best wishes,

Tom Banmann

Tom Baumann, Chair CCC

WELCOME MESSAGE 02



A GLOBAL MULTI-STAKEHOLDER NETWORK INTEGRATING DIGITAL SOLUTIONS TO SCALE CLIMATE ACTIONS.

The CCC was launched in 2017 with the <u>cooperation of the UNFCCC Secretariat</u> in response to growing interest and the rapid evolution of digital innovations for climate action. The original purpose of the CCC was to grow a "big tent" open global multi-stakeholder network to support collaboration among members and stakeholders to advance blockchain (distributed ledger technology) and related digital solutions (e.g. IoT, big data) to help mobilize climate finance and enhance MRV (measurement, reporting and verification) to scale climate actions for mitigation and adaptation.

In 2021, the <u>CCC was recognized together with the Crypto Climate Accord</u> in the Top 100 Influencers in Crypto and Blockchain. As of COP27 2022, the CCC has grown to 360+ organizations in 69 countries, including partnerships with both climate and digital communities.

ABOU THE CCC 03



SOME OF THE CCC 360+ ORGANIZATION MEMBERS





















www.chainlinklabs.com













www.flowcarbon.com

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www.goldstandard.org





OUR GENESIS & BRAND

The genesis and brand for the CCC is a combination of a global "human chain" to collaborate on solutions to challenges in order to advance blockchain and digital innovations to achieve ambitious climate action goals. The CCC, as its name connotes, is a coalition - a group formed by two or more parties agreeing to work together to achieve a shared goal. The CCC is not a top-down hierarchical organization or centralized hub directing members. Rather, to be aligned with the ethos of emerging digital innovations to democratize and empower stakeholders, the CCC serves as a decentralized, "connecting mesh" or "collaborative fabric" that helps amplify activities by CCC members collaborating as a global multi-stakeholder network to solve issues and challenges.

As digital innovations are starting to mature, and as described in this report, the CCC is evolving in response to CCC Members and stakeholders demands to focus on activities to resolve an array of challenges, including primarily:

- Growing partnerships across climate and digital communities, including the Digital Innovation Community and Digital Innovation Pavilion within the UNFCCC process
- Supporting knowledge creation and sharing, as well as access to resources to accelerate growth of solutions
- Co-leading and co-creating collaborative efforts, such as via new Climate Chain Labs, for shared data and digital
 innovation infrastructure to help empower stakeholders as an integrated ecosystem

The CCC has been hosted since 2018 by the Canadian not-for-profit NovaSphere, which provides management, legal, and financial systems in support of the CCC.

ABOUT THE CCC 03



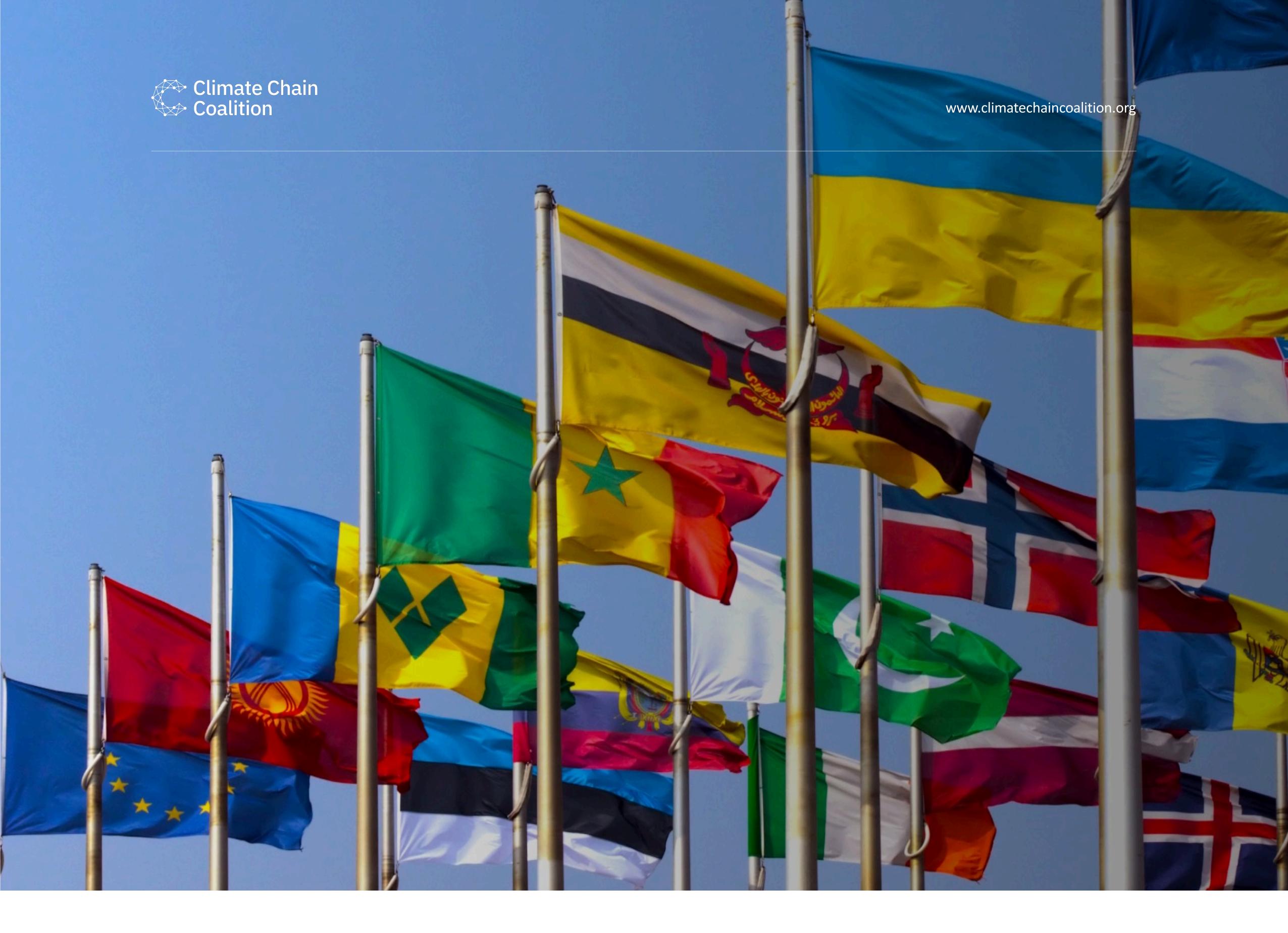
OUR VISION & MISSION

The CCC's Vision is to be a leading global multi-stakeholder collaborative network that synergizes and amplifies efforts with CCC members and partners to co-develop digitally-enabled innovative solutions that empower stakeholders to achieve ambitious climate action goals.

The CCC's Mission is to support multi-stakeholder, member-driven activities to help resolve issues and challenges identified by CCC members and stakeholders including:

- Bridging and partnering with digital and climate communities, via cross-sectoral coordination and cooperation, to enhance networks and communications exchanging knowledge and tools among stakeholders
- Supporting development of shared frameworks and standards to help coordinate and incentivize multistakeholder actions in an effective, accessible, equitable ecosystem-approach using digital solutions for climate
- Supporting access to resources (finance, knowledge, partners) and building capacity across stakeholder groups to develop and utilize digital solutions for climate.

CCC VISION & MISSION 04



OUR CHARTER OF SHARED PRINCIPLES & VALUES

The Climate Chain Coalition membership agreed on shared principles and values guiding how we design and activate our Mission to achieve our Vision. As members of the Climate Chain Coalition, we agree to the application of distributed ledger technology ('DLT', including 'the blockchain') and related digital innovations to addressing climate change, as well as the sustainability of digital innovations, by adhering to the following shared principles and values: (next page)

CCC CHARTER 05



(·) ALIGNMENT WITH THE LONG-TERM GOALS OF THE PARIS AGREEMENT

We recognize the massive challenge and urgency of global transition to a low-carbon and climate-resilient economy and align with the goals of the Paris Agreement. We will cooperate to support immediate actions by and for blockchain and related digital solutions that contribute to the achievement of this transition.

(·) ADVANCEMENT OF DLT FOR BETTER CLIMATE CHANGE SOLUTIONS

We will cooperate to support the rapid advancement of DLT solutions to address climate change across mitigation and adaptation through enhanced climate actions, including but not limited to the measurement, reporting and verification (MRV) of the impact of all sorts of intervention, and the mobilization of climate finance from diversified sources.

(·) COLLABORATION WITHIN THE SCOPE OF THE COALITION

On the basis of these shared principles and values, we will collaborate on concerted activities and in the dissemination of outputs in relation to DLT solutions and support stakeholder capacity building with regard to the deployment of shared tools and systems to advance climate change governance, especially in developing countries.

(·) TECHNOLOGY NEUTRALITY

We recognize that DLT evolves constantly and therefore, maintain a neutral position regarding the applicability of DLT.

(·) COMMITMENT TO STANDARDIZATION

We will collaborate to establish basic standards in the development of related tools in support of the efficacy of DLT applications for climate change governance.

(·) DISSEMINATION OF DLT BENEFITS

We will collaborate on DLT-related solutions to be developed in the interest of cost-effectiveness, integrity, transparency, and empowering stakeholders in socio-economic systems.

FRAUD MITIGATION

We will collaborate on a proactive strategy to identify and seek to mitigate fraudulent activities associated with the application of DLT in climate change and sustainability governance in general, as appropriate.

() RESPONSIBILITY FOR ADDRESSING CHALLENGES ATTRIBUTABLE TO DLT APPLICATIONS

As organizations concerned about environmental integrity generally and climate change specifically, we recognize some negative effects and current challenges of many DLT applications (in particular those using the blockchain with proof of work consensus) regarding their levels of energy consumption and GHG emissions. We are transparent and forthcoming while we actively seek appropriate solutions to address these challenges.

(·) SUSTAINABLE DEVELOPMENT GOALS

We recognize that climate change is one of the Sustainable Development Goals (SDGs) and will encourage the development of DLT-based innovations for climate change which can simultaneously contribute to the achievement of SDGs.

CCC CHARTER 05



LAUNCH OF THE DIGITAL INNOVATION PAVILION AT COP27

CCC GROWING PARTNERSHIPS ALLIANCES TO ACCELERATE CLIMATE ACTION

Partnerships are foundational to supporting CCC members, and for the CCC to achieve its mission and vision. Indeed, the UNFCCC helped launch the CCC in 2017 and served as co-chair for the first 5 years. The World Bank supported and engaged CCC members in events, and research and development. Collaboration of the CCC with CCC members and their partnerships (see list of examples below) further enriches the depth and breadth of partnerships with communities throughout the ecosystem of digital innovations for climate and sustainability.

In addition to the organizations that have helped the CCC, the CCC has helped launch initiatives in the digital community, for example:

- Hyperledger Climate Action and Accounting Special Interest Group
- INATBA and the Climate Action Working Group (now Social Impact and Sustainability)
- InterWork Alliance and the Sustainability Working Group



LAUNCH OF THE DIGITAL INNOVATION PAVILION AT COP27

"The COP27 Digital Innovation Pavilion is a space in which digital solution providers and the global climate action and climate governance community can meet and learn from one another to find pathways towards accelerated harnessing of the potentials of emerging technologies like blockchain, AI, IoT and other digital innovations for all-of-society climate action empowerment and implementation of the global climate action goals of the Paris Agreement.

The Digital Innovation Pavilion idea was first articulated at COP25 within the announcement for the Digital innovation Community within the UNFCCC process and developed further at the Blockchain4Climate networking event at the UN MENA Regional Climate week in Dubai in March 2022. The Pavilion hosts and partners are determined to have a positive impact at COP27, while building already now the alliances and capacities for an even stronger presence and strategic alignment with future COP presidencies, especially next year's COP28, which will take place at EXPO City Dubai (UAE)."

MIROSLAV POLZER, IAAI GLOCHA & STRATEGIC DIRECTOR, CLIMATE CHAIN COALITION

The CCC and its members' efforts to organize in-person and virtual meetings with stakeholders from different sectors/regions/issues creates opportunities to develop partnerships to accelerate the development and implementation of digital innovations for climate.

The relationship with the UNFCCC as CCC co-chair during the first 5 years to help grow the global network is changing during COP27 in which the CCC will be a partner with the <u>UN Global Innovation Hub (GIH)</u>, an innovation space set up by the UNFCCC Secretariat for needs-based identification of innovative solutions for climate action challenges. CCC is one of the lead partners of UN GIH on digital innovation for climate.

NETWORKING & PARTNERSHIPS 06



"The COP27 Digital Innovation Pavilion is a space in which digital solution providers and the global climate action and climate governance community can meet and learn from one another to find pathways towards accelerated harnessing of the potentials of emerging technologies like blockchain, AI, IoT and other digital innovations for all-of-society climate action empowerment and implementation of the global climate action goals of the Paris Agreement.

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GRAPHS & CHARTS

CCC MEMBERSHIP EVOLVING OVER TIME

CCC MEMBERS



CCC FIRST OPEN MEETING AT WORLD BANK INNOVATE 4 CLIMATE, FRANKFURT 2019

The CCC is continuing to grow and support partnerships focusing on carbon markets, digital measurement, reporting and verification, digital finance, strategy development for global climate governance, and climate action empowerment. The CCC and UNFCCC partnered also at <u>Climate Week 2022</u> in New York to deliver a joint event on Digital Measurement, Reporting and Verification and Carbon Markets.

The CCC has grown remarkably from the founding 12 organizations in 2017 just after COP23, to 170 by COP25 in 2019, and reaching 361 members by COP27 in 2022. The following tables and graphs help to illustrate the stocktake of the CCC's diverse global multi-stakeholder network and priorities:

- CCC members by type of organization
- CCC member use of different blockchain technologies
- CCC member stage of development for blockchain technologies
- CCC member by HQ location
- CCC member priorities for market geographies
- CCC member priorities for different types of applications
- CCC member priorities for different issues/sectors
- CCC member priorities for different stakeholders and target users

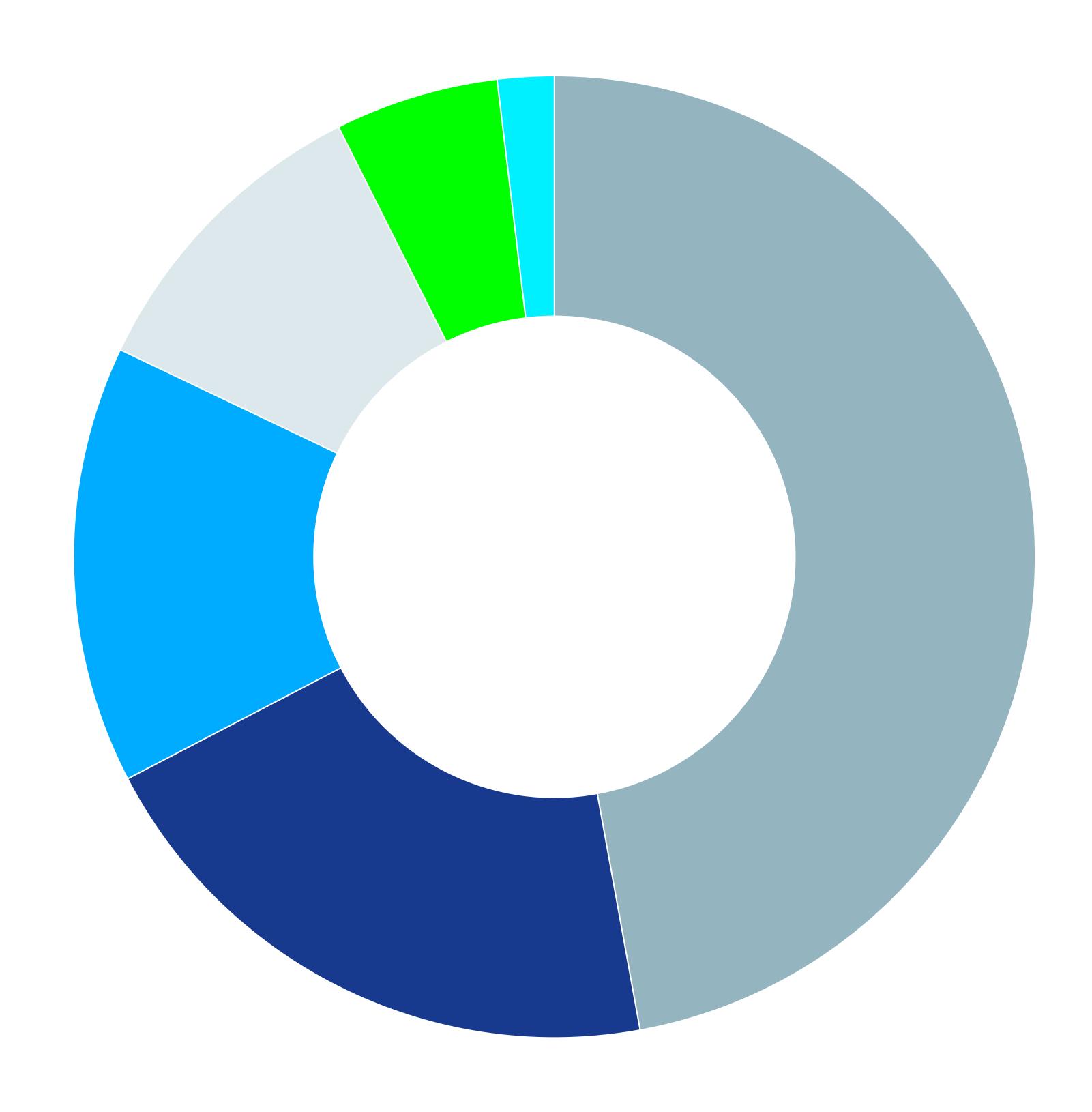
CCC members are evolving at a spectacular rate, which this brief report is unable to convey. The CCC website provides a navigable map and member database to learn more about and to connect with each of the CCC members.

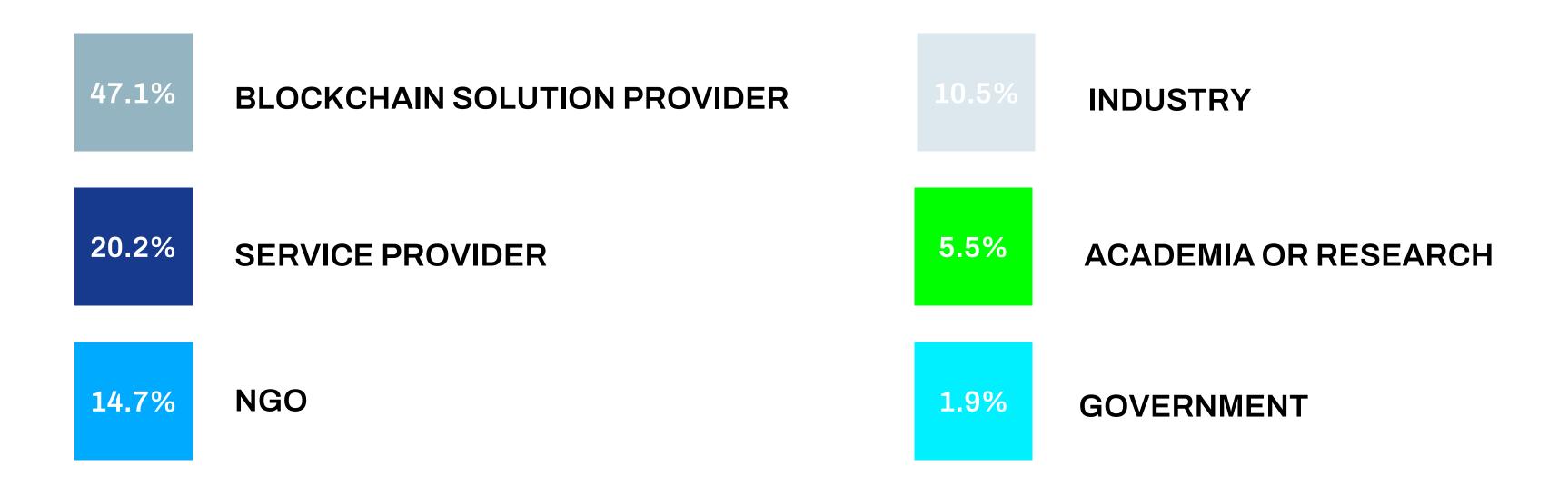
CCC MEMBERS 07



NOVEMBER 2022

CCC MEMBERS TYPE OF ORGANIZTION

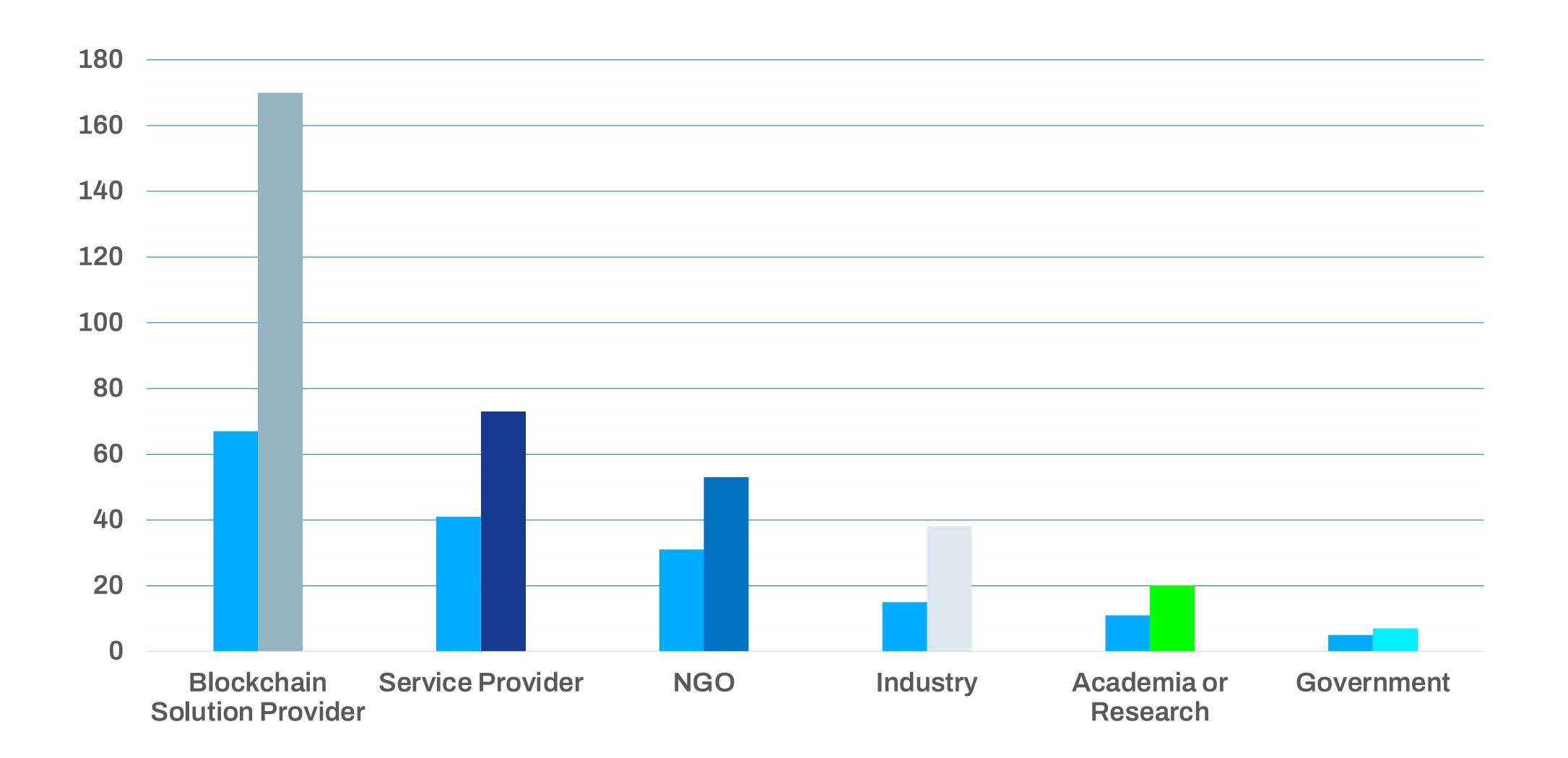






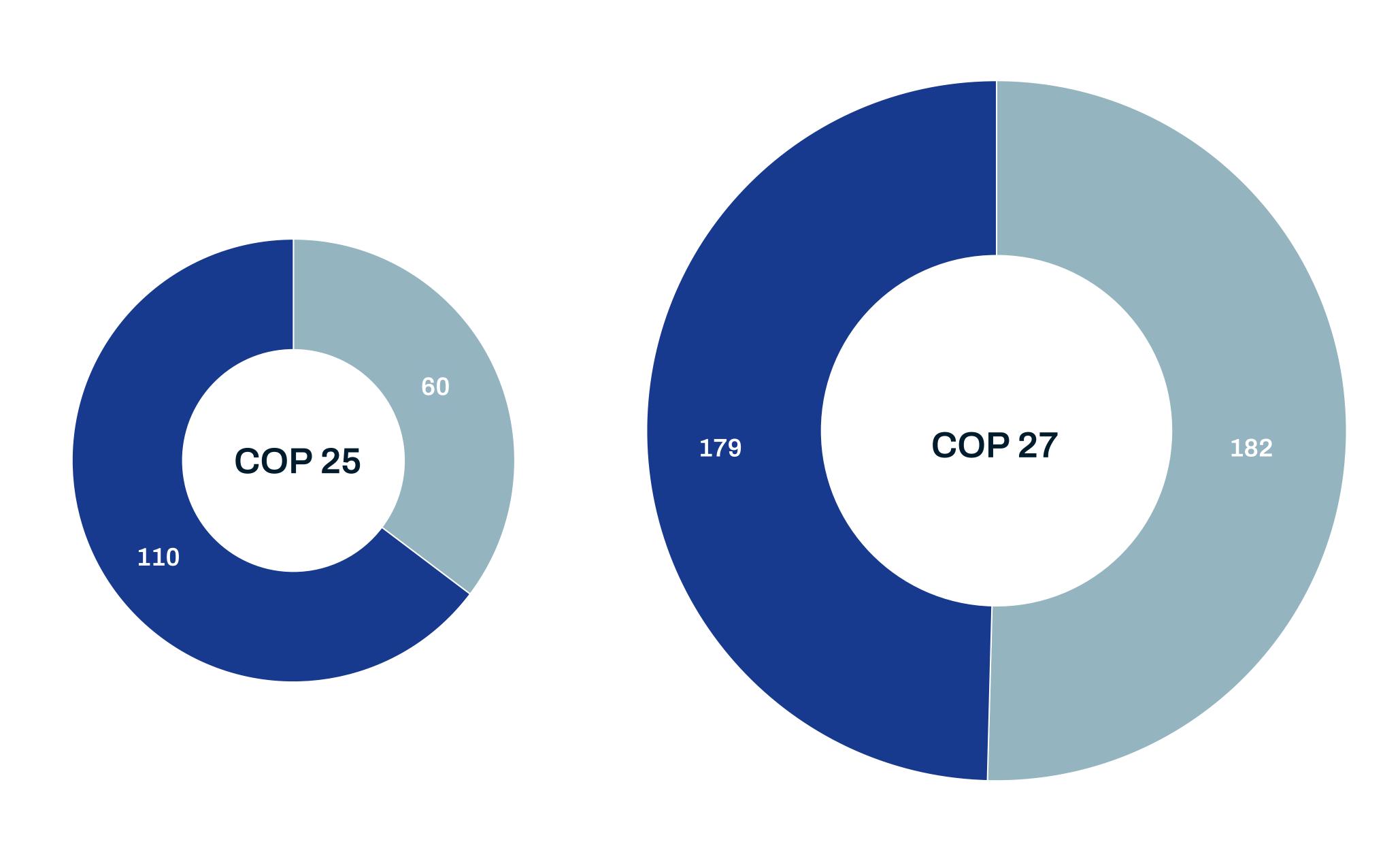
CCC MEMBERS TYPE OF ORGANIZTION

Number of CCC Members	COP25 2019	COP 27 2022	Change	% Change
Total CCC Members	170	361	191	112%
Blockchain Solution Provider	67	170	103	154%
Service Provider	41	73	32	78%
NGO	31	53	22	71%
Industry	15	38	23	153%
Academia or Research	11	20	9	82%
Government	5	7	2	40%





CCC MEMBERS USING BLOCKCHAIN



23 USING 2 OR MORE BLOCKCHAINS

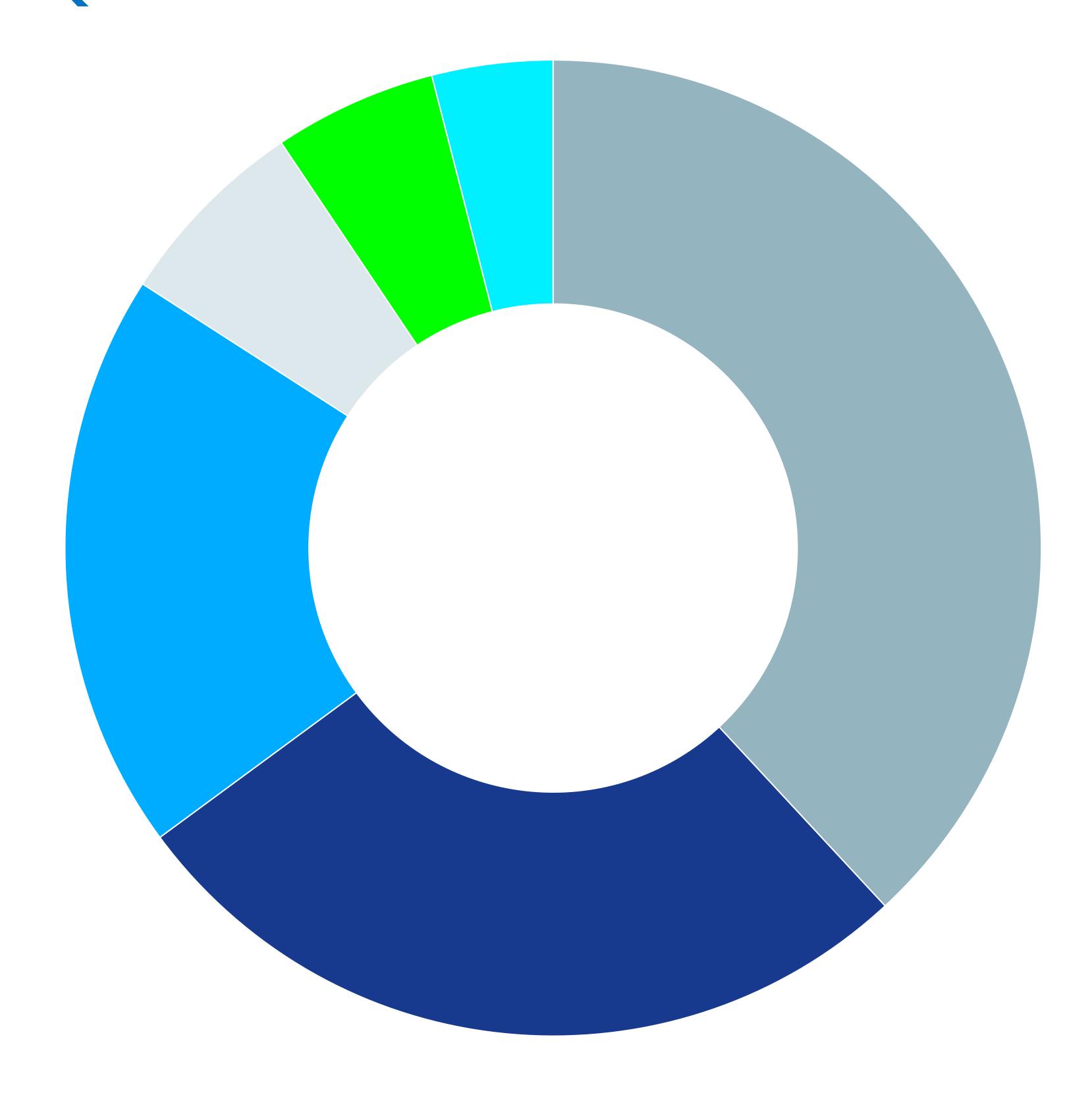
62 USING 2 OR MORE BLOCKCHAINS

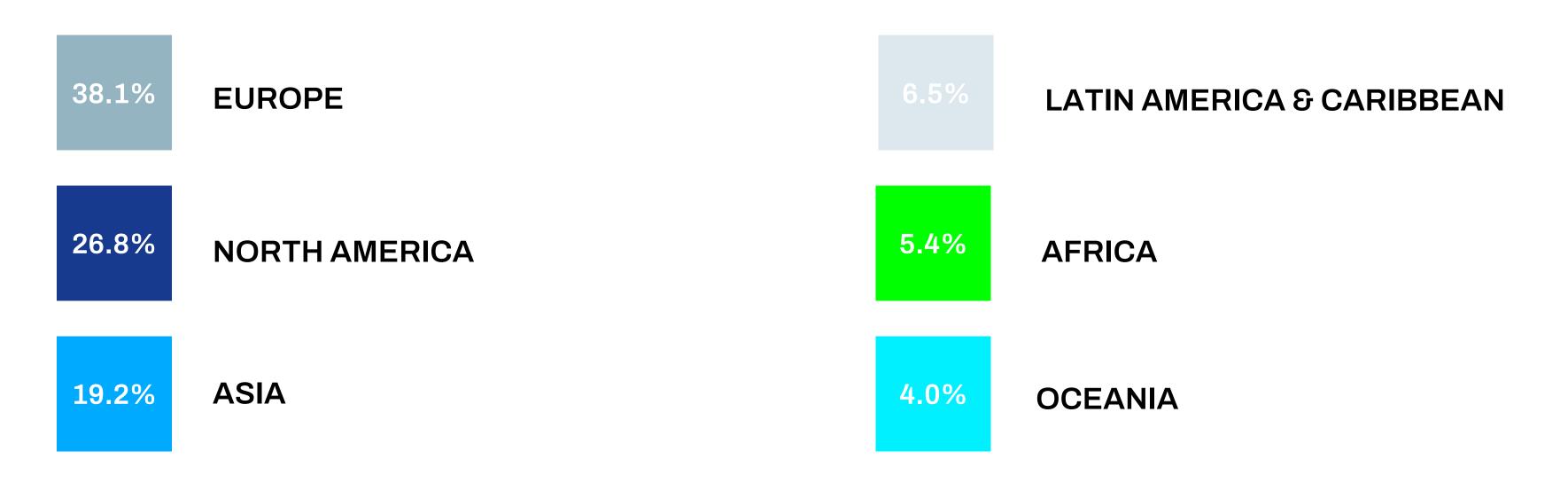




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CCC MEMBERS HQLOCATION

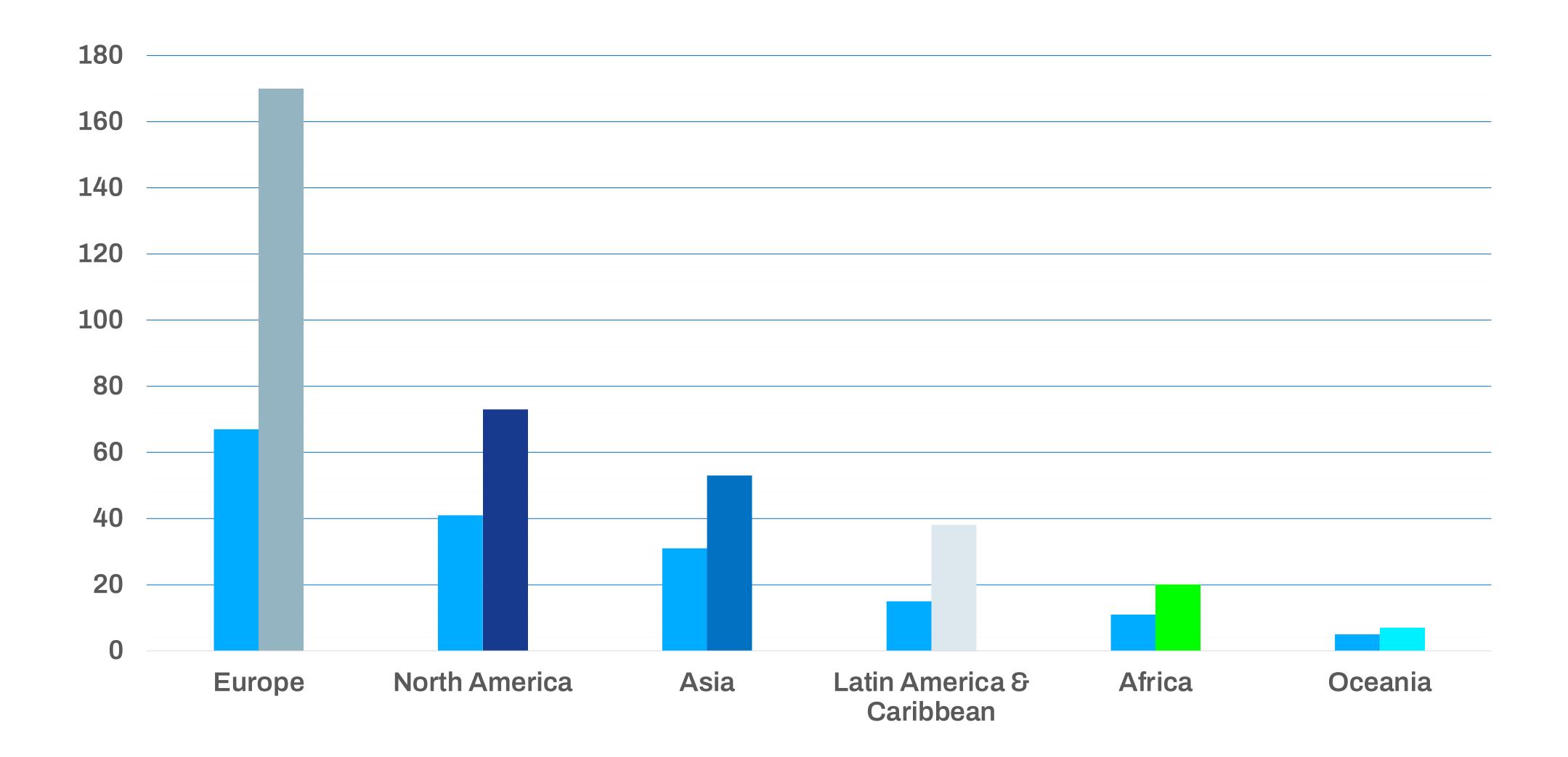






CCC MEMBERS HQLOCATION

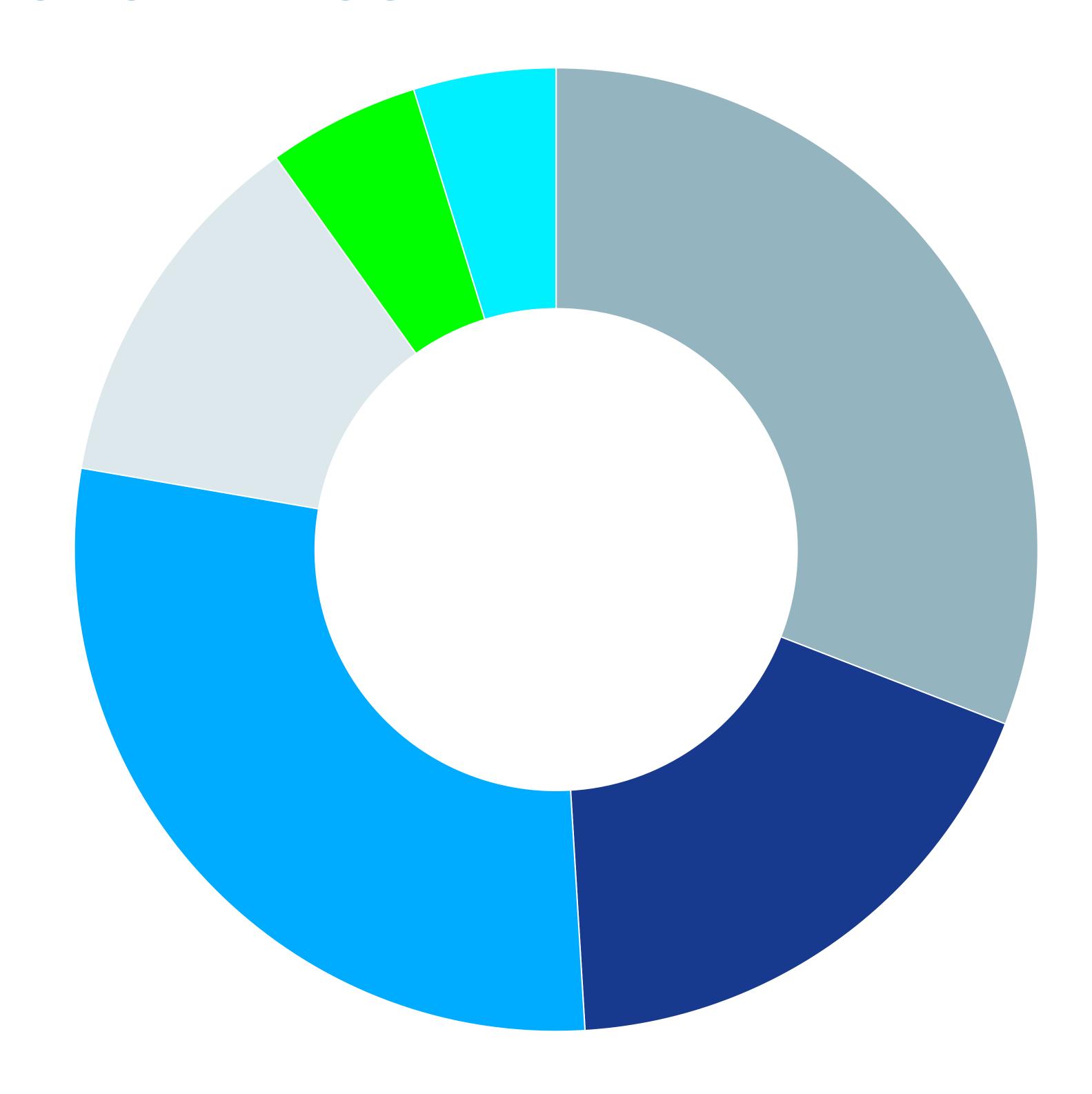
Number of CCC Members	COP25 2019	COP 27 2022	Change	% Change
Total Number of Countries	44	69	25	56%
Europe	57	135	78	137%
North America	49	95	46	94%
Asia	34	68	34	100%
Latin America & Caribbean	14	23	9	64%
Africa	9	19	10	111%
Oceania	7	14	7	100%



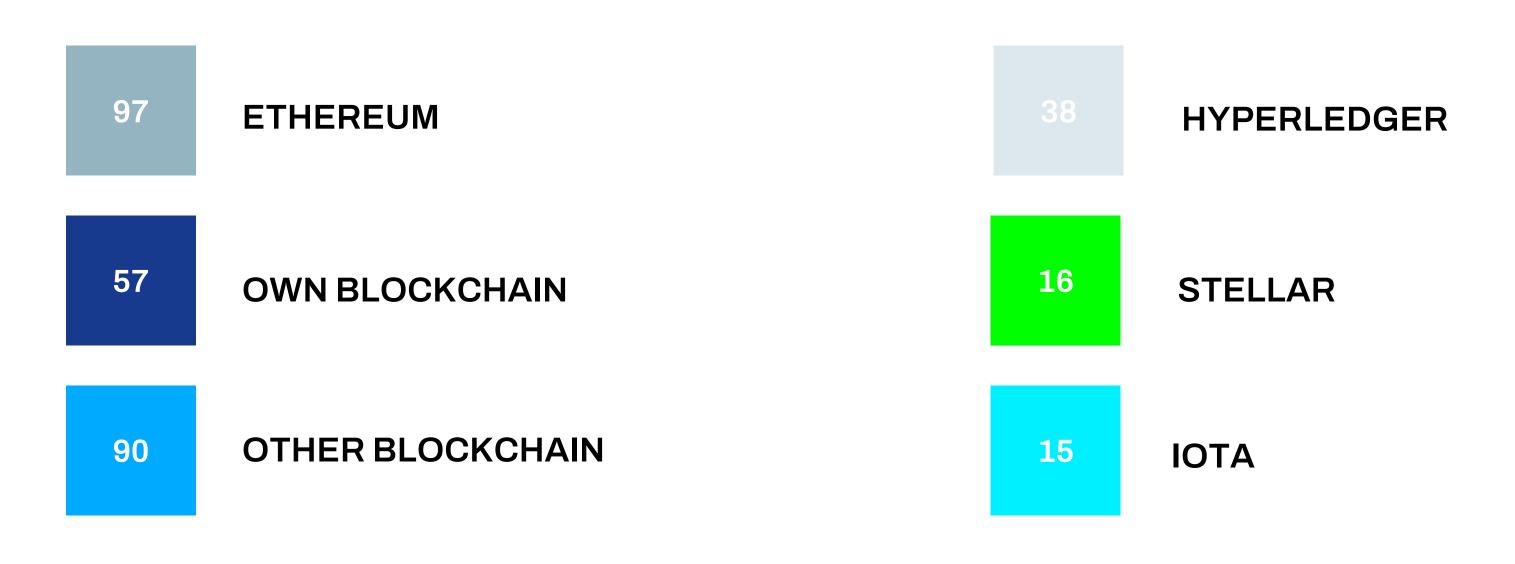


NOVEMBER 2022

CCC MEMBERS BLOCKCHAIN USED



* Other blockchains include (but not limited to, there are many): Tezos, Cardano, Hedera, Tendermint, Bitcoin, Lykke, Quasar, Chia, Thor, Algorand...

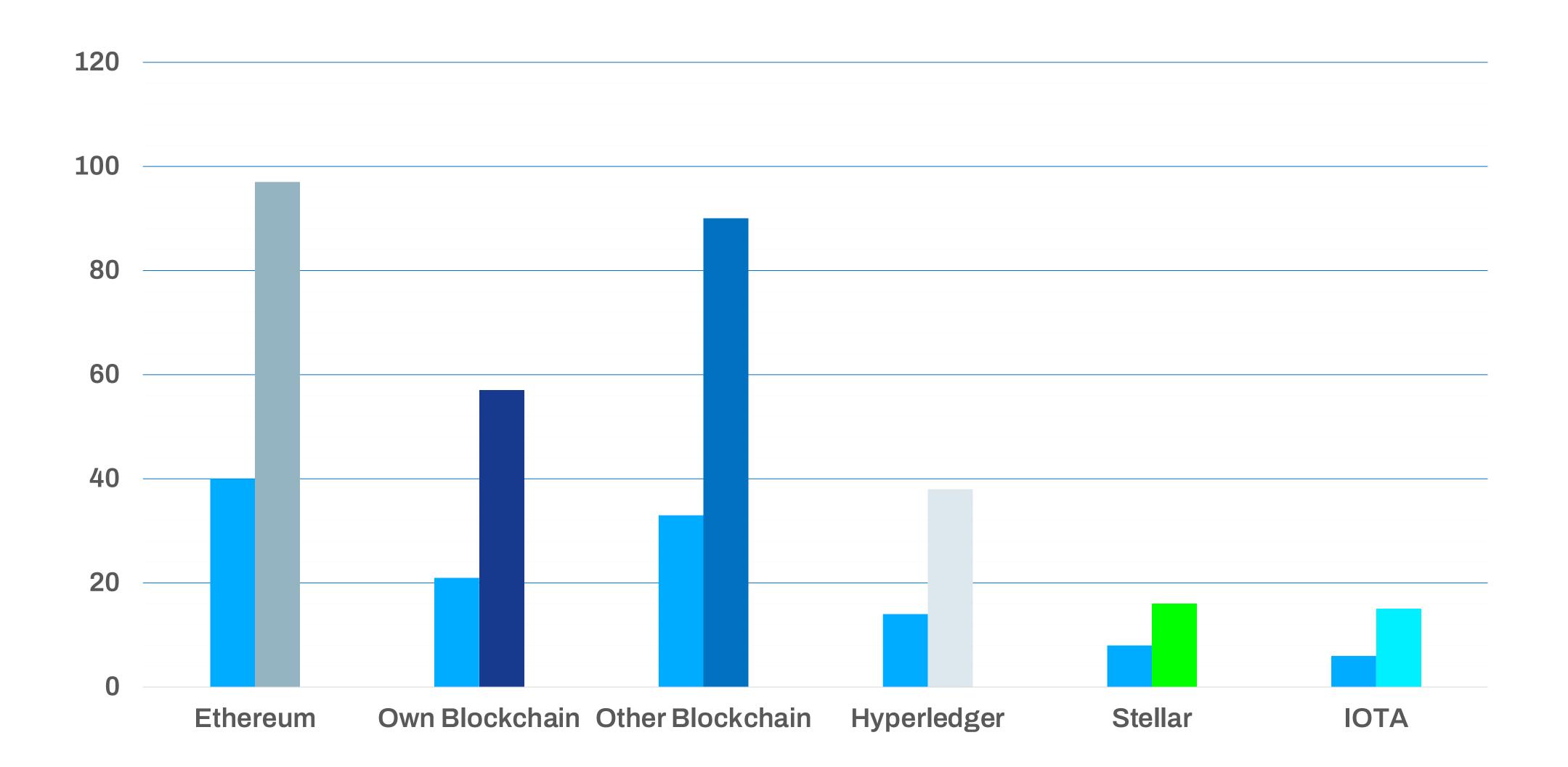




CCC MEMBERS BLOCKCHAIN USED

Number of CCC Members	COP25 2019	COP 27 2022	Change	% Change
Ethereum	109	242	133	122%
Own Blockchain	90	193	103	114%
Other Blockchain*	94	186	92	98%
Hyperledger	76	156	80	105%
Stellar	81	150	69	85%
IOTA	68	142	74	109%

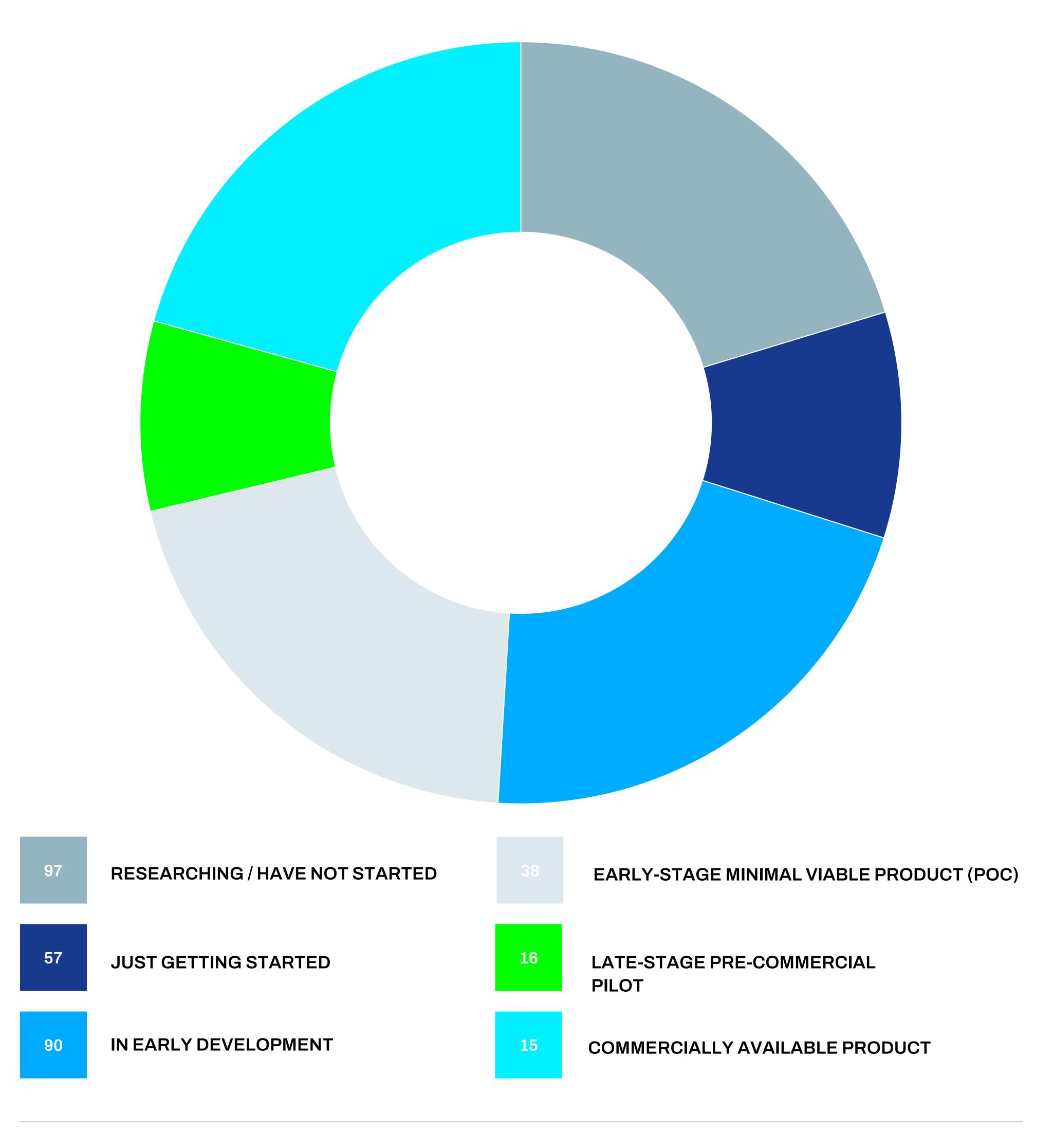
^{*} Other blockchains include (but not limited to, there are many): Tezos, Cardano, Hedera, Tendermint, Bitcoin, Lykke, Quasar, Chia, Thor, Algorand...





NOVEMBER 2022

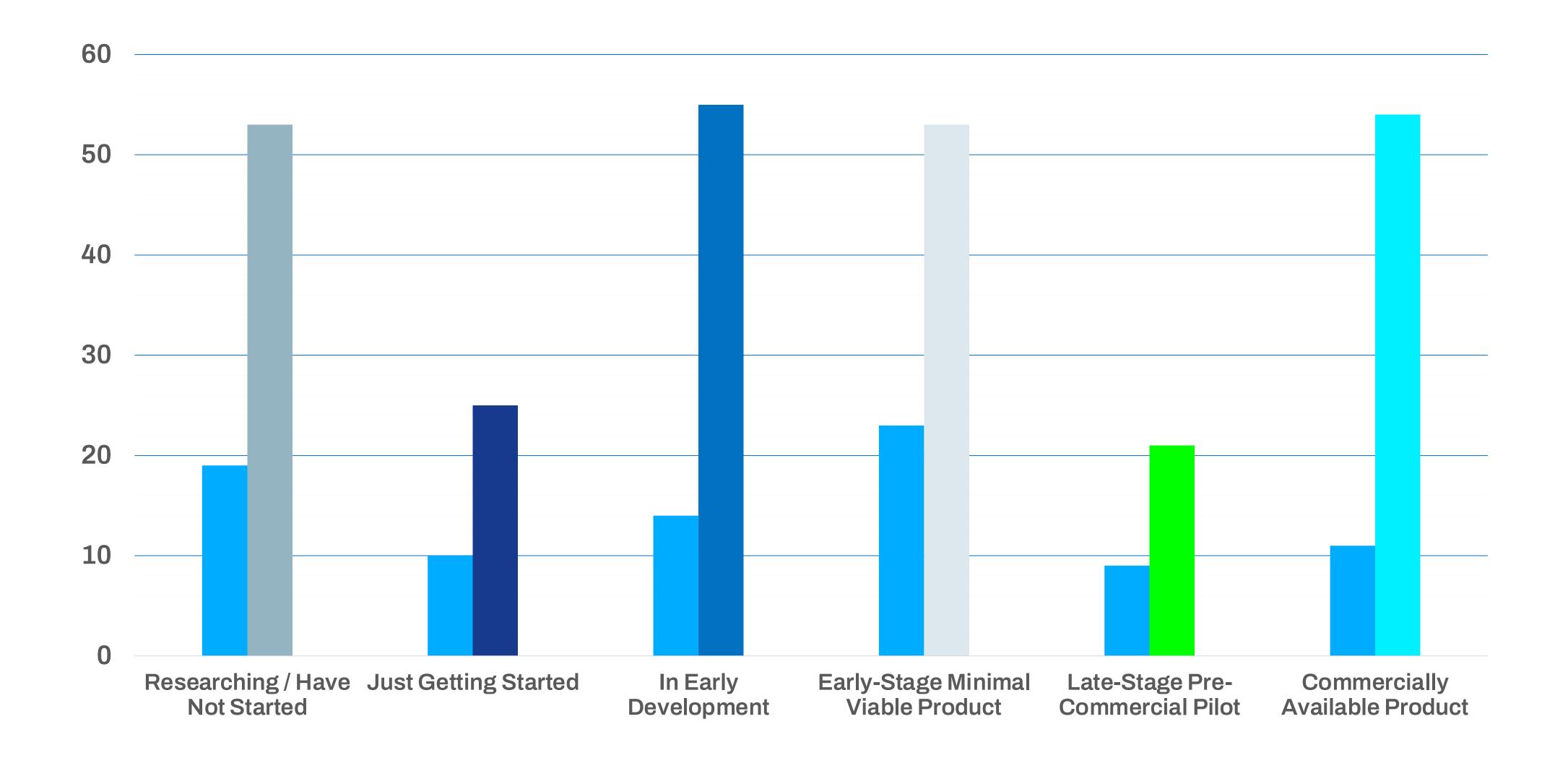
CCC MEMBERS STAGE OF BLOCKCHAIN USE





CCC MEMBERS STAGE OF BLOCKCHAIN USE

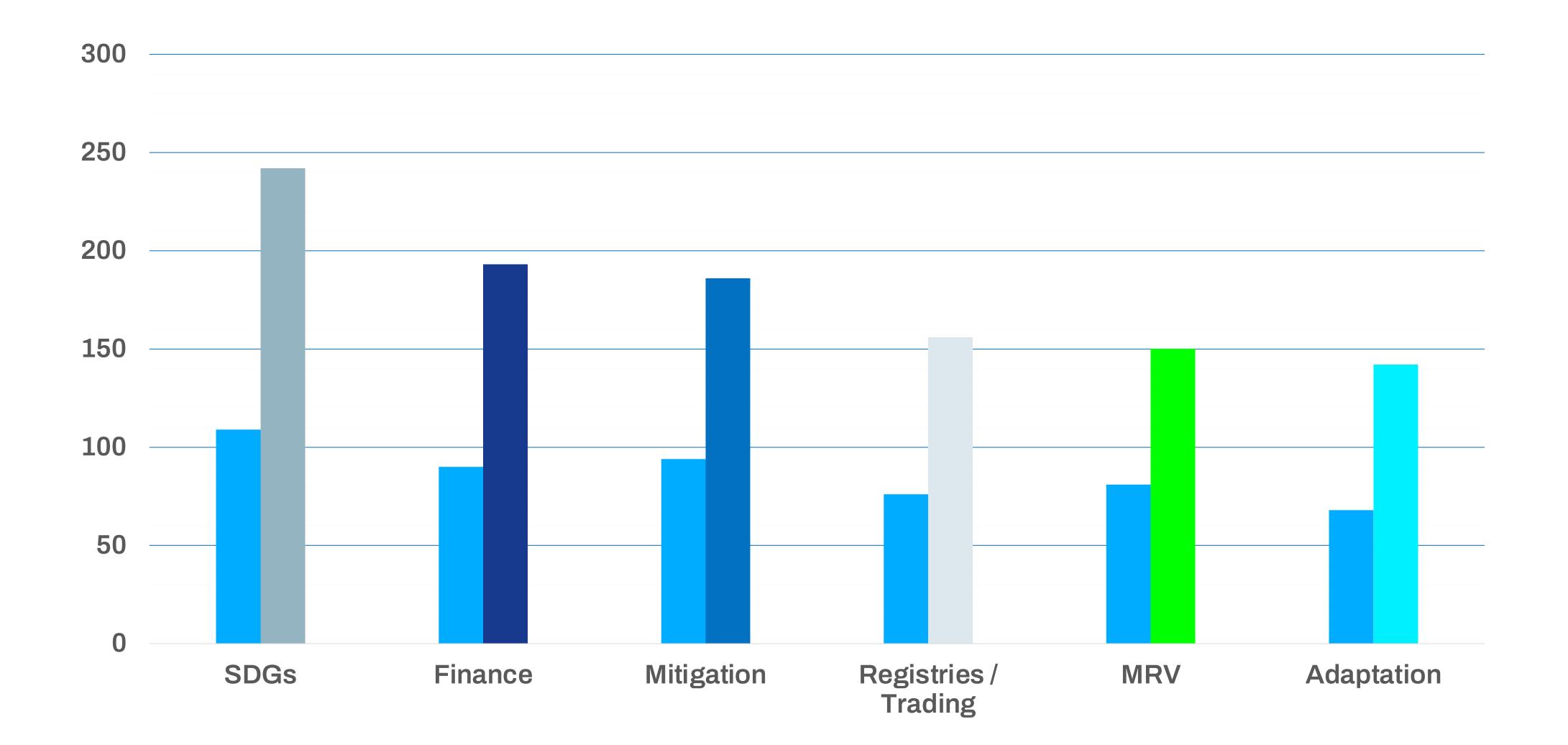
Number of CCC Members	COP25 2019	COP 27 2022	Change	% Change
Researching / Have Not Started	109	242	133	122%
Just Getting Started	90	193	103	114%
In Early Development	94	186	92	98%
Early-Stage Minimal Viable Product	76	156	80	105%
Late-Stage Pre-Commercial Pilot	81	150	69	85%
Commercially Available Product	68	142	74	109%





CCC MEMBERS PRIORITY APPLICATIONS

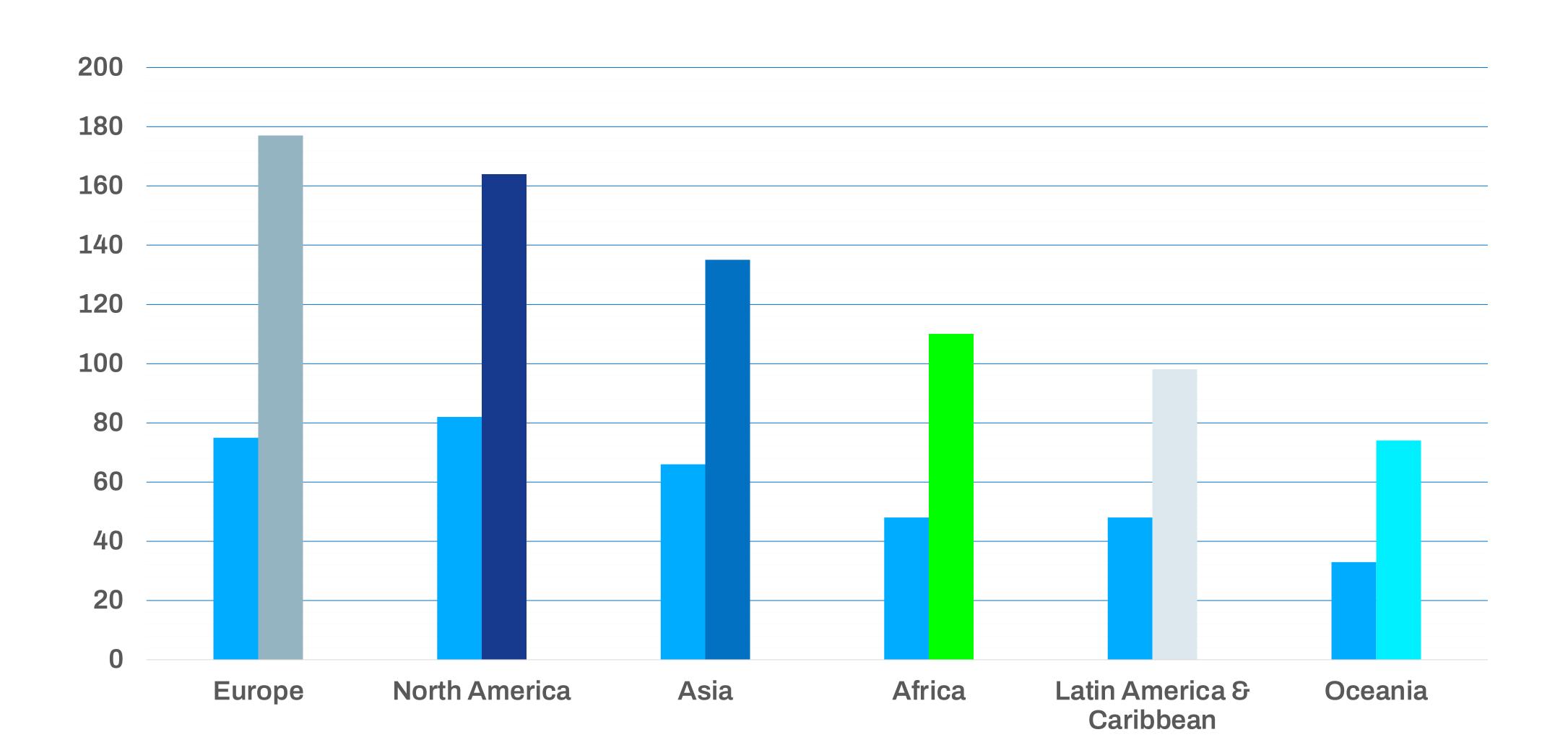
Number of CCC Members	COP25 2019	COP 27 2022	Change	% Change
SDGs	109	242	133	122%
Finance	90	193	103	114%
Mitigation	94	186	92	98%
Registries / Trading	76	156	80	105%
MRV	81	150	69	85%
Adaptation	68	142	74	109%





CCC MEMBERS PRIORITY MARKETS

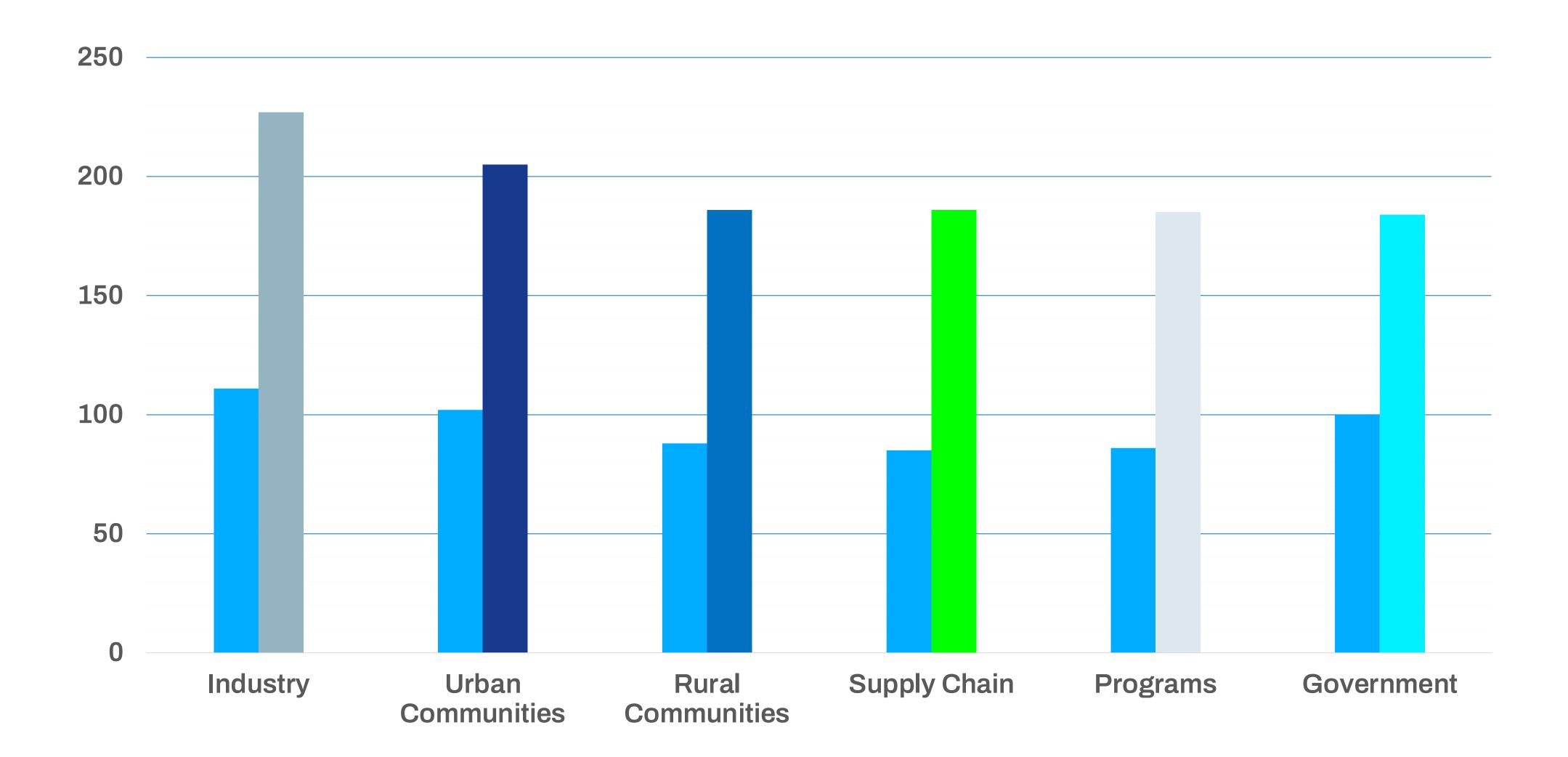
Number of CCC Members	COP25 2019	COP 27 2022	Change	% Change
Europe	75	177	102	136%
North America	82	164	82	100%
Asia	66	135	69	105%
Africa	49	110	61	124%
Latin America & Caribbean	47	98	51	109%
Oceania	33	74	41	124%





CCC MEMBERS PRIORITY STAKEHOLDERS

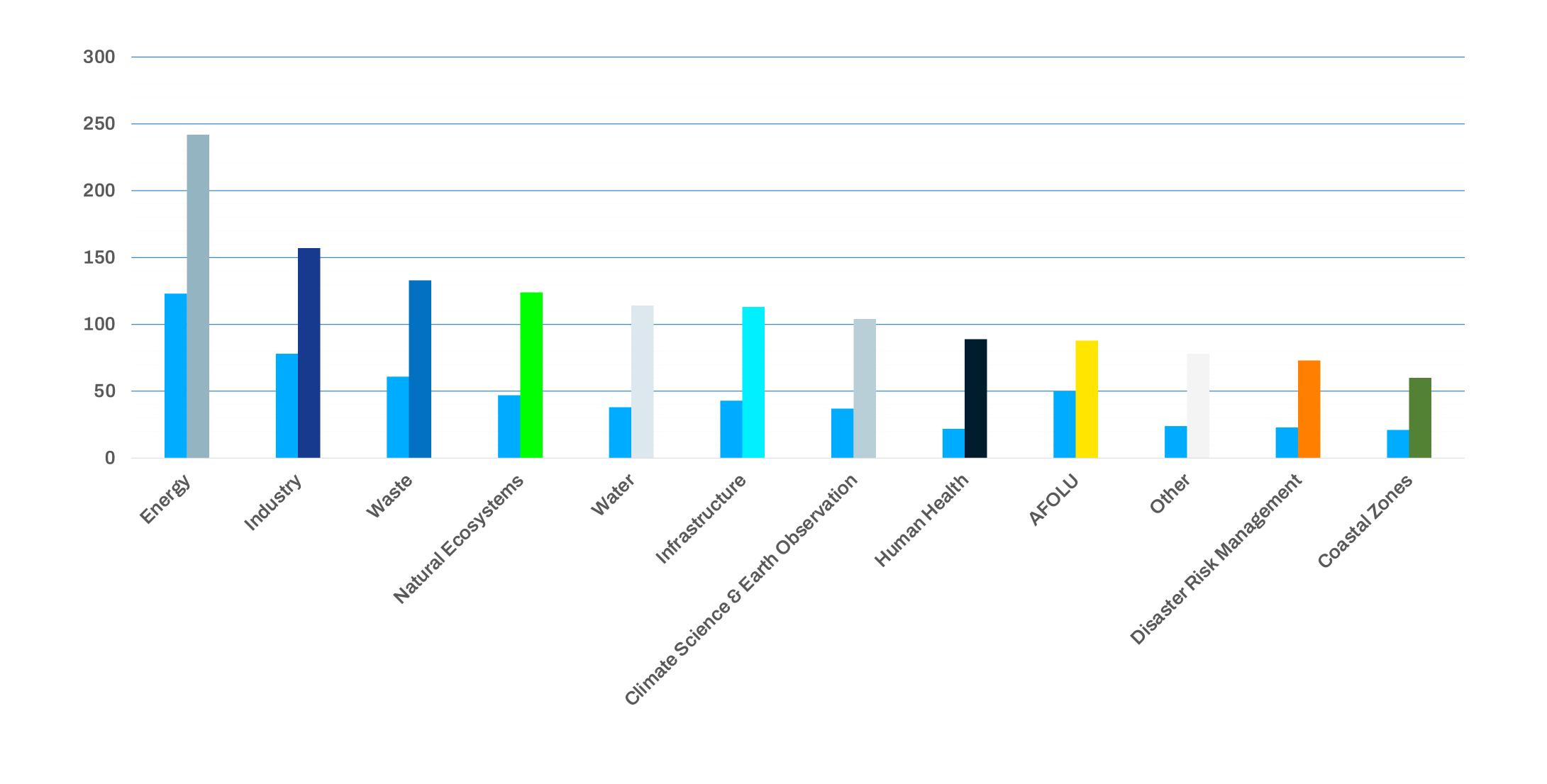
Number of CCC Members	COP25 2019	COP 27 2022	Change	% Change
Industry	111	227	116	105%
Urban Communities	102	205	103	101%
Rural Communities	88	186	98	111%
Supply Chain	85	186	101	119%
Programs	86	185	99	115%
Government	100	184	84	84%





CCC MEMBERS PRIORITY ISSUES / SECTORS

Number of CCC Members	COP25 2019	COP 27 2022	Change	% Change
Energy	123	242	119	97%
Industry	78	157	79	101%
Waste	61	133	72	118%
Natural Ecosystems	47	124	77	164%
Water	38	114	76	200%
Infrastructure	43	113	70	163%
Climate Science & Earth Observation	37	104	67	181%
Human Health	22	89	67	305%
AFOLU	50	88	38	76%
Other	24	78	54	225%
Disaster Risk Management	23	73	50	217%
Coastal Zones	21	60	39	186%



08



NETWORKING & PARTNERSHIPS

CCC LAUNCHING OUR PATH FORWARD



CCC LAUNCHING OUR PATH FORWARD

Continuing on the momentum of growth in CCC membership and partnerships, at COP27 the CCC is launching our path forward to build up its leadership program, boost resources and provide value-added activities according to:

- a strategy for the CCC focused on making the CCC entity more effective in performing its role as a "connecting mesh" and "collaborative fabric" in the overall ecosystem
- a strategy of the CCC focused more on the collective vision of the CCC stakeholders in co-leading and cocreating the data and digital innovation infrastructure to help empower stakeholders to achieve ambitious climate action goals.

The CCC strategy recognizes the emerging potential of innovative governance solutions, such as Decentralized Autonomous Organizations (DAO), and the CCC will initiate a learning process that will allow CCC to build the knowledge base and institutional readiness to have activities involving DAOs in due time. Thereafter, CCC would proceed methodically to build capacity for itself and the wider community.



MEMBERSHIP

NETWORKING & PARTNERSHIPS

COOPERATE

CCC Members can self-organize to cooperate on shared interests (research, case studies, policy, governance, infrastructure) and develop partnerships. CCC Leaders can join Climate Chain Labs to structure and manage joint activities in collaboration with partners to define and develop resources and innovations.





DEPLOY SOLUTIONS

CCC Members in collabroation with Leaders, Partners and Users deploy solutions, linked with co-created and shared digital innovation infrastructure, into the marketplace to achieve ambitious climate goals (different sectors and applications, open and shared, private and commercial).

NETWORKING

The CCC is an open global network to join and interact with different stakeholders (digital companies, project developers, service providers, users, NGOs, academia, government, international organizations...) and to learn, to connect and to engage with related initiatives.



The CCC will continue to serve as a "big tent" global multi-stakeholder network while working to enhance its activities to support the CCC membership and to engage CCC stakeholders and partners that have highlighted priorities for:

- Communications, awareness building and knowledge exchange of successful case studies, via an advanced database
- Coordination and mobilizing resources
- Co-creating and supporting tools and platforms for a shared data and digital infrastructure to accelerate innovations for ambitious climate actions.

As described in the Networking & Partnerships section above, the CCC will continue to reinforce collaboration with related initiatives and will strengthen its focus as an active partner in the UNFCCC activities, including the Digital Innovation Community, the Digital Innovation Pavilion, and UN Global Innovation Hub. The CCC will also increase the use of its communications toolkit to enhance its knowledge exchange, including development of an advanced database accessible to stakeholders to support resource mobilization.

The CCC membership is continuing to evolve in the scope and maturity of digital solutions for climate. The changes drive the need for a CCC leadership program to help mobilize resources to support CCC member activities to solve issues and challenges and to achieve the CCC Mission and Vision. CCC membership interests span free-open access (appropriate for newcomers) as well as more advanced leadership activities (champions and change agents) supported with financial contributions. The CCC's new leadership program will be launched among the first actions to operationalize the new CCC strategy.

The CCC will cooperate with CCC Leaders and CCC Partners to launch a series of Climate Chain Labs with a format and terms of reference structured to optimize leaders' collaboration for committing time, effort and resources to optimize value-added progress, coherence and relevance for stakeholders. The Climate Chain Labs will help manage structured programs focused on key issues to co-create tools and platforms for a shared data and digital infrastructure to accelerate innovations for ambitious climate actions.

The CCC is extending and refining how it is organized and how it can better support the variety of links among CCC members and stakeholders that span an extensive multi-dimensional array of issues. The CCC is a learning and doing organization, as the CCC evolves to changing demands of stakeholder and member-driven needs. The new CCC Strategy will continue to advance in collaboration with members and partners - together we will succeed in utilizing digital innovations to achieve ambitious climate action goals that also respect the sustainable development goals.

Contact us for more information – www.climatechaincoalition.org

