



# How derivatives markets are helping the world fight climate change

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September 2020



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### About FIA

*FIA is the leading global trade organization for the futures, options and centrally cleared derivatives markets, with offices in Brussels, London, Singapore and Washington, D.C.*

*FIA's mission is to:*

- *support open, transparent and competitive markets,*
- *protect and enhance the integrity of the financial system, and*
- *promote high standards of professional conduct.*

*As the leading global trade association for the futures, options and centrally cleared derivatives markets, FIA represents all sectors of the industry, including clearing firms, exchanges, clearing houses, trading firms and commodities specialists from about 50 countries, as well as technology vendors, lawyers and other professionals serving the industry.*

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“There are major societal problems facing us, ranging from climate change to food security ... It can be disheartening at times that as multinationalism begins to fray at the edges, we find ourselves in greatest need for global cooperation and solutions. In these times of political uncertainty, I am reminded of the power of markets as a catalyst for change.”

**Walt Lukken, President & CEO, FIA**

*Opening remarks, FIA IDX, June 4, 2019, London*

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## INTRODUCTION

Derivatives markets help the global economy manage risk. Futures, options and other derivatives enable multinational companies to absorb currency fluctuations, allow energy companies to mitigate short-term price volatility so they can invest in future infrastructure, and let farmers grow their crops without worrying that global trade disruptions might drive them to ruin.

The risks posed by climate change are undeniably real and urgent. They include direct financial risks from extreme weather, as well as the transition risks associated with fundamental changes in how the world does business.

It should be no surprise, then, that derivatives markets are deeply engaged in the world’s response to climate change. The global cleared derivatives industry has steadily evolved over the last several years, creating new products and new venues to manage this risk, showcasing the value of market-based solutions.

Specifically, derivatives markets play a vital role in discovering prices for everything from a barrel of crude oil to a megawatt of solar energy to a tonne of CO<sub>2</sub>, helping businesses and policymakers understand the true costs of climate change. Even legacy contracts like thermal coal futures are important tools for the global response to climate change. These contracts – like all derivatives contracts – offer important signals on supply and demand through pricing trends. Furthermore, legacy contracts on so-called “dirty” energy sources are vital to consumers who need to limit their exposures to price risk, now and in the future, which allows them to create long-term investment plans for a more sustainable future.

In some ways, recent climate-related innovations in derivatives markets are a natural extension of an industry that prides itself on serving a wide variety

of market participants. Consider CME Group, the world's largest derivatives exchange, which recently launched E-mini S&P 500 ESG Index futures, a new risk-management tool that was constructed to align with the Environmental, Social and Governance (ESG) principles of a growing number of global institutional investors and asset managers. Elsewhere, Frankfurt-based Eurex, the largest derivatives exchange in Europe, also recently introduced a new class of equity index futures contracts tied to ESG benchmarks, which have been widely accepted by global investors. Another European-based exchange, Euronext, lists the Euronext Eurozone ESG Large 80 Index, designed to focus on the highest-ranking companies from their industry group as measured by ESG criteria including the support for a transition to a low-carbon economy.

With over \$30 trillion USD now flowing into ESG investments,<sup>1</sup> there is clearly demand for these types of products. (For a non-exhaustive list of ESG-related derivatives and environmental contracts, see the [Appendix](#) at the end of this document.) But it would be a mistake to characterize the derivatives industry's role as simply reacting to new business opportunities. In fact, many market participants are proactively using ESG derivatives as part of an overall strategy to make their own operations more sustainable. For example, Nasdaq, which runs exchanges on both sides of the Atlantic, has made a commitment to operate as carbon-neutral by the end of 2020. Many leading banks are also actively using derivatives markets to support the transition to a greener economy.

We share a collective responsibility to meet the urgent challenges posed by climate change. And derivatives market participants have, in fact, already risen to those challenges in many ways.



### Key Takeaways:

- Market-based innovations in derivatives markets are vital to addressing climate change concerns.
- Industry-developed best practices and standards highlight the importance of collaboration among market participants and leveraging industry expertise.
- It is crucial for the public and private sectors to work together and with a global perspective to ensure laws and regulations avoid unnecessary conflicts and support market-driven solutions.

1 "2018 Global Sustainable Investment Alliance's biennial global sustainable investment review." <http://www.gsi-alliance.org/trends-report-2018/>

As we look to the future, FIA intends to help market participants effectively manage climate-related risks as their business models may face periods of significant disruption, and to work in partnership with policymakers to design regulatory frameworks that support continued innovation and the development of market-based solutions. In doing so, FIA welcomes the opportunity to help forge a sustainable global financial system that reflects the high social and environmental standards of our members and ultimately makes our world a better place for everyone, in every nation, in every industry.

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In service to this mission, FIA is eager to work in partnership with regulators, lawmakers and other policymakers in the following areas:

**Fostering innovation and market-driven solutions:** Derivatives markets are naturally innovative and have already influenced sustainable finance strategies around the globe through their support of new products and trading venues. We hope policymakers will encourage market-driven experimentation through flexible laws and regulation, and partner with FIA on practical industry solutions to avoid overly rigid or restrictive regulation.

**Supporting shared standards and best practices built by our industry:** Derivatives exchanges in particular have a long history of developing and enforcing standards for commodity contracts. In recent years, some exchanges have begun building sustainability standards into their operations. These derivatives exchanges have unique knowledge of the underlying marketplace, and have built trust with market participants through a history of communication and transparency. Regulators can play an important role by supporting this industry-led process, and acknowledging the existing standards that underpin our markets.

**Striving for regulatory harmonization at home and abroad:** Derivatives markets are global, yet face fragmented regulatory landscapes across jurisdictions — and sometimes, even within a single country. To meet the urgent and substantial

work that lies ahead, it is crucial for any sustainability-related laws to acknowledge existing industry-led solutions and the disparate regulatory and legal burdens currently in place in order to avoid complexity and confusion. Regulators, global standard-setters and lawmakers can play an important role by encouraging consistency in policy actions across jurisdictions, and acting deliberately with enough time to accommodate legitimate industry concerns before rolling out any new regulation.



## INNOVATION

Sustainability efforts across the derivatives ecosystem differ in their details, but share a common trait: they are born out of industry-led innovation and adaptability. Climate change-related innovation is evident in big efforts, like the creation of carbon marketplaces that did not exist until relatively recently, but also in smaller and more targeted changes that collectively advance sustainability issues worldwide.

One important tool in combating climate change is a market-based concept called cap-and-trade. In short, the approach helps control emissions by putting a price on carbon, and providing economic incentives through an allocation of a limited number of permits that must be purchased by those who pollute more and can be sold by those who pollute less.

This market-based solution pre-dates the current climate change debate. The U.S. Environmental Protection Agency put such a cap-and-trade system in place in the 1990s in response to atmospheric levels of sulfur dioxide and nitrogen oxides, which cause acid rain.

And the system worked. Acid rain has declined substantially since implementation of the cap-and-trade system, with sulfur dioxide emissions declining 92% from 1980 to 2019.<sup>2</sup>

Similar solutions have been built on the foundation of derivatives markets over the last few decades. In the United States, the private sector has proactively supported emissions marketplaces such as the Regional Greenhouse Gas Initiative (RGGI). The RGGI sets a cap on emission allowances for utilities across Northeastern and Mid-Atlantic states, and a futures market built and operated by the Intercontinental Exchange (ICE) helps provide the price discovery and liquidity that is crucial for this carbon market to operate.

In fact, an August 2020 report<sup>3</sup> sponsored by the RGGI itself notes the following benefits from its relationship with derivatives markets:

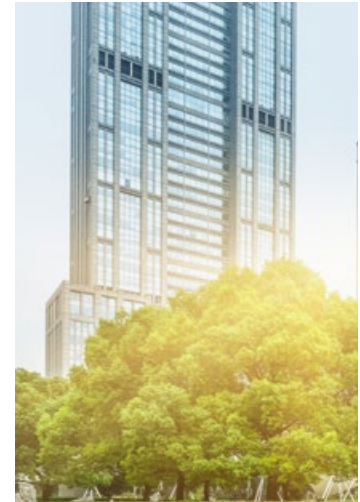
*“The secondary market is important for several reasons. First, it gives firms an ability to obtain CO2 allowances at any time during the three months between the RGGI auctions. Second, it provides firms a way to protect themselves against the potential volatility of future auction clearing prices. Third, it provides price signals that assist firms in making investment decisions in markets affected by the cost of RGGI compliance.”*

These are tangible ways that markets have proven to be part of the solution. And this support for RGGI is mirrored by the relationship of derivatives markets to the EU Emissions Trading System, a cornerstone of the EU policy to combat climate change. Established in 2005, it was the world’s first international carbon market and to date remains the biggest, covering around 45% of all greenhouse gas

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FIA and its members are eager to partner with regulators and put our collective creativity to good use in the fight against climate change. We hope to show policymakers that our markets offer proven solutions and we are willing allies in the global effort to stem the tide of climate change.

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2 “Sulfur dioxide Trends.” <https://www.epa.gov/air-trends/sulfur-dioxide-trends>

3 “Report on the Secondary Market for RGGI Co2 Allowances: Second Quarter 2020.” [https://www.rggi.org/sites/default/files/Uploads/Market-Monitor/Quarterly-Reports/MM\\_Secondary\\_Market\\_Report\\_2020\\_Q2.pdf](https://www.rggi.org/sites/default/files/Uploads/Market-Monitor/Quarterly-Reports/MM_Secondary_Market_Report_2020_Q2.pdf)





## How derivatives markets are helping the world fight climate change

emissions in the EU.<sup>4</sup> Here, the ICE suite of ECX financial products helps support this carbon market and provide similar benefits.

Derivatives markets are clearly a part of the global effort to put a price on carbon and thus fight climate change. However, our industry has also responded with market-based solutions for more specific environmental concerns, too.

As the second largest producer of palm oil in the world, Malaysia's national economy is closely tied to demand for this agricultural commodity. Unfortunately, many palm oil farmers in the region have destroyed large swaths of rainforest in recent years to increase their crops. In response to sustainability concerns raised by market participants, Asian derivatives exchange Bursa Malaysia modified the specifications of its well-established palm oil contract by adding a documentation requirement that now identifies the farms producing the oil – and thus, provides information on whether that oil was indeed produced responsibly. This increased transparency allows end-users and other market participants to make more informed investment decisions and avoid taking delivery of any palm oil produced in a way that conflicts with their sustainability goals.

While climate-related products and exchanges are perhaps the most outward sign of our industry's response to climate change, it is important to note that the firms participating in these markets are also innovating and evolving internally as well.

Consider ABN Amro, a leading global securities services provider. ABN Amro has a proven track record on sustainability issues in many areas, but one particular element that stands out in our markets is how the firm conducts its derivatives clearing operations. As a clearing member, the firm assumes responsibility for the derivatives transactions of its clients and therefore implements regular screening to ensure it is not servicing a client that does not conduct itself in accordance with good sustainable business ethics. Since 2012, ABN Amro has been voluntarily integrating sustainability risks alongside more conventional risk factors like a firm's credit rating. This proactive approach to climate risk is a powerful example of how firms like ABN Amro are looking beyond the old way of doing business and into the future of global finance.

There is much to learn from the innovative approach that is natural to derivatives markets, and the progress the cleared derivatives industry has made on sustainability issues both large and small. FIA and its members are eager to partner with regulators and put our collective creativity to good use in the fight against climate change. We hope to show policymakers that our markets offer proven solutions and we are willing allies in the global effort to stem the tide of climate change.

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4 "EU Emissions Trading System (EU ETS)." [https://ec.europa.eu/clima/policies/ets\\_en](https://ec.europa.eu/clima/policies/ets_en)





## STANDARDIZATION

Climate change poses near-term and long-term risks to businesses of all types. However, firms naturally must balance the needs of their existing operations and customers against their desire to transition to a sustainable future. Additionally, the realities of shareholder pressures and fiduciary obligations put on public companies must be acknowledged in any comprehensive solution to climate change.

Companies may be forced to move at different speeds based on their resources and needs. That is particularly true when those firms deal in physical commodities like agricultural, metal or energy products which demand significant supply chain investments. It is therefore essential that lawmakers provide a framework using forward-looking metrics such as capital expenditures to support these firms on their path to a more sustainable business model.

Complicating matters are the unique business, legal and social challenges that each firm must consider when addressing climate risks. In truth, perhaps the only things that market participants universally share is the inherent burden of change. The transition to a more sustainable financial sector will be costly, at times uncertain, and requires a clear plan and a long-term commitment.

Derivatives markets can help companies navigate this change, and the London Metal Exchange (LME) provides one example of the way forward.

The LME plays a central role in the global marketplace for aluminum, copper and other industrial metals, and its contracts are closely tied to the physical market for these metals. As consumers have grown more concerned about the impact of the mining and metals industries, initially concerning conflict minerals, the LME has responded by exploring ways to incorporate ESG standards into its contract specifications. In 2017, the LME conducted a survey to gather input in relation to standards on responsible sourcing, and soon after it began to introduce relevant standards for metals traded on its exchange. This project is now embedded in

current rules and future plans that ultimately seek to acknowledge a simple truth: how miners operate can be just as important as the quality of the minerals they bring to market.

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FIA supports the rights of derivatives exchanges to develop and supervise their markets in a manner that reflects their values and advances their sustainability agenda. Consulting with members is crucial in this process to provide transparency and certainty for the marketplace through shared standards.

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The journey that the metals industry began in 2017 continues in 2020, with the LME’s recent discussion paper<sup>5</sup> that is intended to provide solutions for a broader range of sustainability issues, including emissions, and to acknowledge sustainable sourcing methods such as recycling. This will provide increased transparency to market participants concerned about their carbon footprints and may serve as a model for other solutions in the near future.

In addition to acting with a clear long-term plan and transparency, which has helped protect the integrity of related markets, an equally important factor for the LME has been its ability to act as a standard-setter. While its push for sustainability in its metals markets was born out of policy suggestions from the Organisation for Economic Co-operation and Development (OECD), the LME was clear in its demand to make sourcing standards obligatory and binding – something it has the unique power to do as a metal derivatives exchange. In fact, LME is explicit about its right to delist metal brands that are not in compliance with its ethical standards. In addition, the exchange plans to build on its existing mission by focusing on broader sustainability for metals, including focusing on electric vehicles, a circular economy and sustainable production.

Other derivatives exchanges also play an important role in supporting sustainability standards developed in underlying physical commodity markets. The Commodity Exchange, Inc. (COMEX), which is owned by CME Group, rolled out responsible sourcing guidelines for its physically-delivered Gold contracts in 2015 in collaboration with the London Bullion Market Association (LBMA). Together, the

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5 “LME Sustainability: Summary.” <https://www.lme.com/About/Responsibility/Sustainability>

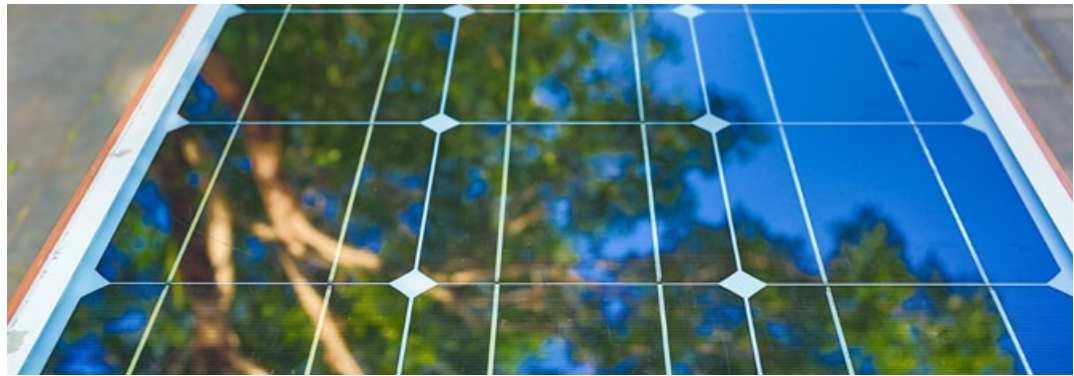
organizations worked with refiners and industry experts to establish verification, certification and accreditation of responsible precious metal supply chains using standards established by the OECD. CME Group is exploring additional responsible sourcing guidelines for silver, platinum, steel, copper and palladium contracts as well, in collaboration with experts in the respective physical markets.

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Shared standards are also a key factor in price discovery – and ultimately, in creating market-driven solutions that will properly account for the costs of climate change in everything from power markets to agricultural commodities.

Any responsible sourcing or sustainability efforts will necessarily prompt debate, as would any over significant changes to the way markets function. But the LME's establishment of clear contract specifications and wide industry support show how the derivatives industry can indeed help to build a more sustainable global financial system. Along the way, industry-led efforts like this one can also provide industry participants with a greater level of certainty both in regards to what they are currently trading and how their business may operate in the future.

FIA encourages regulators to acknowledge the important role exchanges play in the global financial system generally, and see them as valuable partners in a sustainable finance agenda. It is our strong opinion that as long as exchanges engage in good faith and in consultation with members, they should be trusted as standard-setters, given their knowledge of complex markets and their ability to effect real change.



## HARMONIZATION

Derivatives markets have a proven track record of innovation, with exchanges often acting as standard-setters to effectively and transparently deploying industry-led solutions. But given the global scope and dramatic scale of climate-related risks, the simple reality is that this challenge is bigger than any one contract or derivatives exchange – and as such, requires a coordinated response across geographies and industry groups.

Derivatives market participants know all too well the regulatory complexity that can arise when multiple stakeholders are involved, as our industry is highly interconnected even if our regulatory bodies are fragmented across geographies or asset classes. As such, FIA and its members welcome policymakers to partner with us on deliberate, coordinated solutions to ensure we are all working together. This includes supporting industry-led solutions that have already been implemented, and coordinating with other public sector initiatives around the globe.

In addition to harmonizing regulation with the current industry environment, it is equally important to fully understand how any future action could affect the global financial industry in years to come. The public sector plays a crucial role in identifying the nature and scope of climate-related challenges, and then partnering with our industry to ensure proposed policy actions do not disrupt markets or create additional uncertainty.

A current example of the importance of forethought and public input comes from the European Green Deal, underpinned by Article 191 on the Treaty of the Functioning of the European Union, which incorporates a package of measures designed to help meet the Paris Agreement commitments. The Green Deal includes the EU taxonomy and the renewed sustainable finance strategy, among other items. To support these efforts, the European Commission's Technical Expert Group (TEG) on sustainable finance was convened in July 2018 and published its final report on the EU taxonomy in March 2020. The full taxonomy for climate change mitigation will be finished later in the year, with full application planned by end of 2021.

This comprehensive effort affects many industry groups and markets, including derivatives markets. As mentioned previously, businesses are transitioning to low-carbon models at very different speeds based on their unique needs, and derivatives contracts including natural gas are one of the most important tools in managing that transition. In fact, the International Energy Agency said in June<sup>6</sup> that the taxonomy must acknowledge natural gas as one of several “transition technologies” and stressed that failure to do so “may have wide impacts on private and public funding.”

FIA believes the European Commission’s TEG was right to conclude that, as a class of financial instruments, all derivatives including natural gas contracts are “neutral” in the taxonomy. We caution against any shift that may result in any individual futures or derivatives contracts being labelled “brown” rather than “green” because of potential harm to producers, consumers and industries that rely on these derivatives. This includes participants that look to respond to the effects of climate change as well as firms that need to manage risk and deliver stable pricing for producers and consumers. The TEG’s comprehensive, multi-year exploration of taxonomy in consultation with stakeholders shows the importance of seeking out experts in our markets who can help advance an effective sustainability agenda while still protecting derivatives products that are crucial parts of the clean energy transition.

It must be said, too, that while climate-related financial risk is indeed a serious matter, the global derivatives industry is currently facing one of the most challenging periods of regulatory change since the 2008 financial crisis. From the debates

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<sup>6</sup> “European Union 2020: Energy Policy Review” <https://www.iea.org/reports/european-union-2020>





of possible reforms to the Markets in Financial Instruments Directive (MiFID) regulatory framework in Europe to the extraordinary uncertainties created by Brexit, from the global transition away from overnight interest rates like the London Inter-Bank Offered Rate (LIBOR) to the implementation of the final phases of uncleared margin rules, the derivatives industry must navigate a number of challenges. And this was before the historic disruptions presented by the novel coronavirus pandemic in 2020. A holistic view of regulation is important in this environment, both to avoid conflicts and to allow for the appropriate time and opportunity for industry input on future actions.

FIA members believe that the most effective sustainability policies will acknowledge industry-led innovations and market-based solutions for managing climate risks, and incorporate the views and expertise of derivatives market participants. We welcome any partnership with policymakers that will help ensure our existing risk-management solutions and best practices are reflected in any laws and regulations, and that those policies are harmonized across jurisdictions.

Rest assured, we are up for the challenge on the many issues that face our industry, including climate change. The initiatives already undertaken by market participants clearly demonstrate this. We support the public sector's focus on sustainability issues that face our industry and encourage policymakers to consider the full scope of any new regulations, both within their jurisdictions and across borders. Just as FIA and its members are eager to partner with the public sector on solutions to climate change, we are hopeful that the global regulatory community will continue to work towards the harmonization and clarity that is necessary to build a more sustainable global financial system.



## CURRENT AND FUTURE RISKS

Environmental sustainability objectives are steadily becoming more integrated into global financial services activities, including the derivatives markets. But the specific climate-related risks we face undoubtedly require more research and discussion if we are to create an effective response and manage an orderly transition for the global economy.

As our markets naturally follow developments in primary and physical markets, FIA and its members are indirectly exposed to a host of challenges that may not be obvious in a simple list of exchanges or derivatives contracts. By way of example, any action taken by regulators to shift demand in things like energy or power markets could create complications and additional risk for derivative market participants who trade related contracts. These may not be primary considerations for policymakers considering new rules, but are nevertheless incredibly important ones for derivatives markets.

FIA encourages all regulators, even those not directly overseeing our industry, to consider the following risks that could impact our industry even if the primary goal of their actions does not seem immediately relevant to derivatives markets:

**Physical risk:** Changes brought about by climate change could include severe flooding or droughts, as well as long-term shifts in growing seasons or precipitation patterns. These present direct, real-world risks — and subsequently, will alter commodity derivatives markets. This is particularly true for agricultural commodities that have long been exposed to weather-related risks, and for energy market infrastructure or the transportation of any commodity that is vulnerable to disruption from hurricanes and other extreme weather.

**Transition risk:** The global transition away from reliance on fossil fuels or legacy commodities that are produced unsustainably presents a host of challenges, including in the commercial physical markets. Specifically, migrating futures market liquidity from one contract to another cannot be done overnight. Market



participants need time to unwind their existing positions and bring new contracts into their trading and clearing systems. Transition periods managed ineffectively may result in a lack of real price discovery and increased price volatility for end-users and throughout the real economy. Policymakers and market participants should acknowledge this and attempt to collectively craft a transparent and workable transition plan before embarking on any effort that may have negative impacts on end-users.

**Liability risk:** Derivatives markets and their participants may face a set of liability risks resulting from the listing of sustainability-related derivative contracts, including fraud and misrepresentation. Markets will naturally rely on certifications from producers, processors, manufacturers, and sponsors of benchmarks. As such, the consequences of intentional or unintentional violations of those certification obligations may have residual liability for various market participants.

**Reputational risk:** All market participants have some measure of reputational risk in the market. Financial firms will seek integrity in their investment strategy, exchanges will seek integrity in their contract offerings, and commodity trading houses will seek integrity of their sustainability commitments and production systems. Regulators who may also seek validation of environmental and sustainability representations prior to approving markets, products, or commodities for trading, could affect public perceptions.

**Operational risk:** Climate risk has a direct impact on businesses and, specifically, on the operational risks of derivatives markets. As the global pandemic of 2020 illustrates, disruptions to how our markets function can come in unexpected ways. Partnerships between the global cleared derivatives industry and its regulators are broadly useful to measure, track and respond to operational risk, but these frameworks will be particularly meaningful in any discussions of climate risk and related actions.

All of these challenges likely would be more pronounced where there is a lack of harmonization of standards. Such an environment could lead to market fragmentation and regulatory arbitrage. Open dialogue within the industry itself as well as with relevant regulators is crucial to providing clarity and avoiding such complications.

To this end, FIA can play a key role in ensuring the derivatives industry and regulators are aligned as we plot a course forward together. As this document shows, our members are committed to these issues and are already part of building a more sustainable future for the global financial system.

We are eager to share more market-based solutions and work in partnership with public-sector officials on this important issue.



## APPENDIX

### A non-exhaustive list of ESG-related derivatives and environmental contracts

Category	Exchange Name	Instrument Type	Contract Name
Emissions	European Energy Exchange	Future	CER Futures
Emissions	European Energy Exchange	Future	CER Spot
Emissions	European Energy Exchange	Future	EUA Futures
Emissions	European Energy Exchange	Option	EUA Options
Emissions	European Energy Exchange	Future	EUA Spot
Emissions	European Energy Exchange	Future	EUAA Futures
Emissions	European Energy Exchange	Future	EUAA Spot
Emissions	ICE Futures Europe	Future	CER Daily Futures
Emissions	ICE Futures Europe	Future	CER Futures
Emissions	ICE Futures Europe	Option	CER Options
Emissions	ICE Futures Europe	Future	ERU Futures
Emissions	ICE Futures Europe	Future	EUA Futures
Emissions	ICE Futures Europe	Option	EUA Options
Emissions	ICE Futures Europe	Option	EUA Options (Futures Style Margin)
Emissions	ICE Futures Europe	Future	EUA Phase 3 Daily Futures
Emissions	ICE Futures Europe	Future	EUA UK Auction
Emissions	ICE Futures Europe	Future	EUAA Futures
Emissions	ICE Futures Europe	Future	EUAA UK Auction
Emissions	ICE Futures U.S.	Future	California Carbon Allowance
Emissions	ICE Futures U.S.	Option	California Carbon Allowance
Emissions	ICE Futures U.S.	Future	California Low Carbon Fuel Standard Credit (OPIS)
Emissions	ICE Futures U.S.	Option	California Low Carbon Fuel Standard Credit (OPIS)

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Category	Exchange Name	Instrument Type	Contract Name
Emissions	ICE Futures U.S.	Future	Regional Greenhouse Gas Initiative
Emissions	ICE Futures U.S.	Option	Regional Greenhouse Gas Initiative
Emissions	Nasdaq Commodities	Future	Carbon CER
Emissions	Nasdaq Commodities	Future	Carbon EUA
Emissions	Nasdaq Commodities	Future	Carbon EUA Deferred Settlement Future
Emissions	New York Mercantile Exchange	Future	California Carbon Allowance
Emissions	New York Mercantile Exchange	Future	California Low Carbon Fuel Standard
Emissions	New York Mercantile Exchange	Future	Carbon EUA Emissions Euro (RC)
Emissions	New York Mercantile Exchange	Future	Certified Emission Reduction Plus (CERplus) Futures (CPL)
Emissions	New York Mercantile Exchange	Future	In Delivery Month European Union Allowance (EUA) Futures (6T)
Emissions	New York Mercantile Exchange	Option	In Delivery Month European Union Allowance (EUA) Options
Emissions	New York Mercantile Exchange	Future	Regional Greenhouse Gas Initiative
Emissions	New York Mercantile Exchange	Option	Regional Greenhouse Gas Initiative
Emissions	Nodal	Future	California Carbon Allowances
Emissions	Nodal	Option	California Carbon Allowances
Emissions	Nodal	Option	California Low Carbon Fuel Standard
Emissions	Nodal	Future	Cross State Air Pollution Rule NOX Ozone Season Group 2 Allowance
Emissions	Nodal	Option	Cross State Air Pollution Rule NOX Ozone Season Group 2 Allowance
Emissions	Nodal	Future	Cross State Air Pollution Rule TR NOx Annual Allowance
Emissions	Nodal	Option	Cross State Air Pollution Rule TR NOx Annual Allowance
Emissions	Nodal	Future	Cross State Air Pollution Rule TR SO2 Group 1 Allowance

*Continued*



## How derivatives markets are helping the world fight climate change

Category	Exchange Name	Instrument Type	Contract Name
Emissions	Nodal	Option	Cross State Air Pollution Rule TR SO2 Group 1 Allowance
Emissions	Nodal	Future	Cross State Air Pollution Rule TR SO2 Group 2 Allowance
Emissions	Nodal	Option	Cross State Air Pollution Rule TR SO2 Group 2 Allowance
Emissions	Nodal	Future	Oregon Clean Fuels Program
Emissions	Nodal	Option	Oregon Clean Fuels Program
Emissions	Nodal	Future	RGGI Carbon Allowances
Emissions	Nodal	Option	RGGI Carbon Allowances
ESG	Chicago Mercantile Exchange	Future	E-mini S&P 500 ESG Index
ESG	Eurex	Future	Euro Stoxx 50 Low Carbon Index (FSLC)
ESG	Eurex	Future	MSCI EAFE ESG Screened (FMSF)
ESG	Eurex	Future	MSCI EM ESG Screened (FMSM)
ESG	Eurex	Future	MSCI Japan ESG Screened (FMSJ)
ESG	Eurex	Future	MSCI USA ESG Screened Index (FMSU)
ESG	Eurex	Future	MSCI World ESG Screened Index (FMSW)
ESG	Eurex	Future	Stoxx Europe 600 ESG-X Index (FSEG)
ESG	Eurex	Option	Stoxx Europe 600 ESG-X Index (OSEG)
ESG	Eurex	Future	Stoxx Europe ESG Leaders Select 30 Index (FSLs)
ESG	Eurex	Option	Stoxx Europe ESG Leaders Select 30 Index (OSLS)
ESG	Eurex	Future	Stoxx Europe Climate Impact index (FSCI)
ESG	Euronext Derivatives Market	Future	Eurozone ESG Large 80 Index
ESG	ICE Futures U.S.	Future	Mini MSCI Emerging Markets ESG Leaders NTR Index
ESG	ICE Futures U.S.	Future	Mini MSCI USA ESG Leaders GTR Index
ESG	ICE Futures U.S.	Future	Mini MSCI World ESG Leaders NTR Index
ESG	Nasdaq Exchanges Nordic Markets	Future	OMXS30 ESG Responsible Index

Continued



Category	Exchange Name	Instrument Type	Contract Name
ESG	Taiwan Futures Exchange	Future	FTSE4Good TIP Taiwan ESG Index (E4F)
Renewables	ICE Futures U.S.	Future	Connecticut Compliance Renewable Energy Certificate Class I Future
Renewables	ICE Futures U.S.	Future	Massachusetts Compliance Renewable Energy Certificate Class I Future
Renewables	ICE Futures U.S.	Future	Massachusetts Solar Renewable Energy Certificate Carve Out I Future
Renewables	ICE Futures U.S.	Future	Massachusetts Solar Renewable Energy Certificate Carve Out II Future
Renewables	ICE Futures U.S.	Future	NEPOOL Dual Qualified Compliance Renewable Energy Certificate Class I Future
Renewables	ICE Futures U.S.	Future	New Jersey Compliance Renewable Energy Certificate Class I Future
Renewables	ICE Futures U.S.	Future	New Jersey Compliance Renewable Energy Certificate Class I Prior Year Future
Renewables	ICE Futures U.S.	Future	New Jersey Solar Renewable Energy Certificate Future
Renewables	ICE Futures U.S.	Future	New Jersey Solar Renewable Energy Certificate Prior Year Future
Renewables	ICE Futures U.S.	Option	One Year Mid-Curve Option on PJM Tri Qualified Renewable Energy Certificates Class 1 Future
Renewables	ICE Futures U.S.	Option	Option on Connecticut Compliance Renewable Energy Certificate Class I Future
Renewables	ICE Futures U.S.	Option	Option on Massachusetts Compliance Renewable Energy Certificate Class I Future
Renewables	ICE Futures U.S.	Option	Option on Massachusetts Solar Renewable Energy Certificate Carve Out I Future
Renewables	ICE Futures U.S.	Option	Option on Massachusetts Solar Renewable Energy Certificate Carve Out II Future
Renewables	ICE Futures U.S.	Option	Option on NEPOOL Dual Qualified Compliance Renewable Energy Certificate Class I Future
Renewables	ICE Futures U.S.	Option	Option on New Jersey Compliance Renewable Energy Certificate Class I Future

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Category	Exchange Name	Instrument Type	Contract Name
Renewables	ICE Futures U.S.	Option	Option on PJM Tri Qualified Renewable Energy Certificate Class I Future
Renewables	ICE Futures U.S.	Future	PJM Tri Qualified Renewable Energy Certificate Class I 2 Year Prior Future
Renewables	ICE Futures U.S.	Future	PJM Tri Qualified Renewable Energy Certificate Class I Future
Renewables	ICE Futures U.S.	Future	PJM Tri Qualified Renewable Energy Certificate Class I Prior Year Future
Renewables	ICE Futures U.S.	Option	Two Year Mid-Curve Option on PJM Tri Qualified Renewable Energy Certificates Class 1 Future
Renewables	Nasdaq Commodities	Future	Electricity Certificate
Renewables	Nasdaq Commodities	Future	Electricity Certificate DS
Renewables	Nodal	Future	California Low Carbon Fuel Standard
Renewables	Nodal	Future	Connecticut Compliance Renewable Energy Certificate Class 1
Renewables	Nodal	Option	Connecticut Compliance Renewable Energy Certificate Class 1
Renewables	Nodal	Future	Connecticut Compliance Renewable Energy Certificate Class 2
Renewables	Nodal	Future	Connecticut Compliance Renewable Energy Certificate Class 3
Renewables	Nodal	Future	District of Columbia Renewable Energy Certificate Tier 1
Renewables	Nodal	Future	District of Columbia Solar Renewable Energy Certificate
Renewables	Nodal	Future	Maine Renewable Energy Certificate Class 1
Renewables	Nodal	Future	Maryland Compliance Renewable Energy Certificate Tier 1
Renewables	Nodal	Option	Maryland Compliance Renewable Energy Certificate Tier 1
Renewables	Nodal	Future	Maryland Compliance Renewable Energy Certificate Tier 1 Bankable
Renewables	Nodal	Option	Maryland Compliance Renewable Energy Certificate Tier 1 Bankable
Renewables	Nodal	Future	Maryland Solar Renewable Energy Certificate

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Category	Exchange Name	Instrument Type	Contract Name
Renewables	Nodal	Option	Maryland Solar Renewable Energy Certificate
Renewables	Nodal	Future	Massachusetts Alternative Energy Certificate
Renewables	Nodal	Future	Massachusetts Compliance Renewable Energy Certificate Class 1
Renewables	Nodal	Option	Massachusetts Compliance Renewable Energy Certificate Class 1
Renewables	Nodal	Future	Massachusetts Compliance Renewable Energy Certificate Class 2
Renewables	Nodal	Future	Massachusetts Renewable Energy Certificate Class 2 WTE
Renewables	Nodal	Future	Massachusetts Solar Renewable Energy Certificate
Renewables	Nodal	Option	Massachusetts Solar Renewable Energy Certificate
Renewables	Nodal	Future	Massachusetts Solar Renewable Energy Certificate Carve Out II
Renewables	Nodal	Option	Massachusetts Solar Renewable Energy Certificate Carve Out II
Renewables	Nodal	Future	NEPOOL Dual Qualified Renewable Energy Certificate Class 1
Renewables	Nodal	Option	NEPOOL Dual Qualified Renewable Energy Certificate Class 1
Renewables	Nodal	Future	New Hampshire Renewable Energy Certificate Class 1
Renewables	Nodal	Future	New Hampshire Renewable Energy Certificate Class 3
Renewables	Nodal	Future	New Jersey Compliance Renewable Energy Certificate Class 1
Renewables	Nodal	Option	New Jersey Compliance Renewable Energy Certificate Class 1
Renewables	Nodal	Future	New Jersey Compliance Renewable Energy Certificate Class 1 Bankable
Renewables	Nodal	Option	New Jersey Compliance Renewable Energy Certificate Class 1 Bankable

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Category	Exchange Name	Instrument Type	Contract Name
Renewables	Nodal	Future	New Jersey Compliance Renewable Energy Certificate Class 2
Renewables	Nodal	Future	New Jersey Solar Renewable Energy Certificate
Renewables	Nodal	Option	New Jersey Solar Renewable Energy Certificate
Renewables	Nodal	Future	Ohio Non-Solar Renewable Energy Certificate
Renewables	Nodal	Future	Ohio Solar Renewable Energy Certificate
Renewables	Nodal	Future	Pennsylvania Compliance Alternative Energy Certificate Tier 1
Renewables	Nodal	Option	Pennsylvania Compliance Alternative Energy Certificate Tier 1
Renewables	Nodal	Future	Pennsylvania Compliance Alternative Energy Certificate Tier 1 Bankable
Renewables	Nodal	Option	Pennsylvania Compliance Alternative Energy Certificate Tier 1 Bankable
Renewables	Nodal	Future	Pennsylvania Compliance Alternative Energy Certificate Tier 2
Renewables	Nodal	Future	Pennsylvania Solar Alternative Energy Certificate
Renewables	Nodal	Option	Pennsylvania Solar Alternative Energy Certificate
Renewables	Nodal	Future	PJM Tri-Qualified Renewable Energy Certificate
Renewables	Nodal	Option	PJM Tri-Qualified Renewable Energy Certificate
Renewables	Nodal	Future	Rhode Island New Renewable Energy Certificate
Renewables	Nodal	Future	Texas Compliance Green-e Eligible Renewable Energy Certificate
Renewables	Nodal	Future	Texas Compliance Renewable Energy Certificate
Renewables	Nodal	Option	Texas Compliance Renewable Energy Certificate
Renewables	Nodal	Future	Texas Compliance Renewable Energy Certificate from CRS Listed Facilities Back Half
Renewables	Nodal	Future	Texas Compliance Renewable Energy Certificate from CRS Listed Facilities Front Half



**BRUSSELS**

Office 621  
Square de Meeûs 37  
1000 Brussels, Belgium  
+32 2.791.7572

**LONDON**

Level 28, One Canada Square  
Canary Wharf  
London E14 5AB  
Tel +44 (0)20.7929.0081

**SINGAPORE**

Level 21, Centennial Tower  
3 Temasek Avenue  
Singapore 039190  
Tel +65 6950.0691

**WASHINGTON**

2001 K Street, NW  
Suite 725, North Tower  
Washington, DC 20006  
Tel +1 202.466.5460

[FIA.org](http://FIA.org)