Baringa Partner's Comments to the Commodity Futures Trading Commission (CFTC)

Market Risk Advisory Committee (MRAC) – Climate-Related Market Risk Subcommittee

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Dear Members of the Climate-Related Market Risk Subcommittee,

Thank you for allowing us the opportunity to provide our insights on the topics and issues identified by the Subcommittee. Baringa Partners is a leading energy and environment consultancy, with 20 years' experience advising governments, the energy industry, and financial services on climate strategy. We commend the Committee for leading the policy discussion on climate change for the financial markets in the US. In this paper, we intend to provide comments that will help the Committee develop policy recommendations under its 2020 Agenda.

Our comments are organized in five sections – in alignment with the supplementary information provided in the Notice – and include our response and recommendation on the issues.

   I. **Challenges & Impediments to Evaluating and Managing Climate-related financial and Market Risks**

To effectively evaluate and manage basic financial and market risks, financial institutions have risk management processes to identify and assess the risks, measure the potential impacts, develop mitigating actions, and continuously report and review the exposure. Climate-related financial and market risks adds complexity to the risk management process – therefore creating challenges and impediments to evaluating and managing these risks. For example, the two main categories of climate-related risks are physical[1] and transitional[2] risks – both of which have financial and market implications. Market risks can arise from uncertainty regarding consumer behavior, market signals, and supply chains – which can contribute to rising financial risks through reduced demand or increased costs from unexpected market changes in supply chains.

To evaluate and manage such risks, we see institutions facing challenges in the following three areas:

   1) Lack of a Taxonomy – While there are both benefits and pitfalls of classifying risks with standard definitions, in the context of climate-related risks a taxonomy is necessary to close a key gap in terms of measurement. The lack of a uniform and harmonized classification system (with robust and practical definitions) creates a barrier in the first step for identifying and measuring the appropriate risks.

   2) Lack of data – To effectively model scenarios, institutions require large amounts of data. It is very difficult to get comprehensive geophysical data on different asset classes that is fit for purpose to do climate risk analytics. For example, in utilities, most companies have a very hard time managing precisely where these physical assets are located and which are in service. There's a long history behind this (utilities focus on getting the lights back on first, then worry about getting the data right) but most utilities have massive work to do to improve their GIS data and ability to use it to support

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[1] Physical risks resulting from climate change can be event driven (acute) or longer-term shifts (chronic) in climate patterns. Physical risks may have financial implications for organizations, such as direct damage to assets and indirect impacts from supply chain disruption. (Bank of England)

[2] Transition risks can occur when moving towards a less polluting, greener economy. Such transitions could mean that some sectors of the economy face big shifts in asset values or higher costs of doing business. (Bank of England)

stress-tests based on climate models, sea-level rise, wildfire forecasts, etc. In the aftermath of Superstorm Sandy in the northeast US, there was a massive effort to determine what the future impacts of climate change and which utility facilities were most at risk.

3) Lack of coordination and enforcement of standards – In recent years, a range of voluntary, regulatory and accounting governance standards have emerged internationally. However, it remains highly fragmented and lacks the coordination and enforcement necessary to measure the impacts of climate-related risks.

Our recommendation to the Committee is to leverage the existing international guidelines from influential financial constituencies such as the FSB, IASB, or the European Commission to address these challenges and move towards a more unified framework.

II. Methods for improving the integration of climate related scenario analysis, stress testing, governance initiatives, and disclosures into financial and market risk assessments and reporting

Improving the integration of climate related scenario analysis, stress testing, governance initiatives, and disclosures into the existing risk assessments and reporting will require institutions to collect new types of data and put in place new processes and governances structures. Integrating these changes will take time and businesses should begin by developing a strategy and an implementation plan.

An effective strategy for integrating climate change risk into a business model is through the following pillars:

1) *Establish Governance* – The Board and Senior Executives should start by setting up a dedicated program with clear strategic objectives and timeframes, identify and allocate responsibility to the relevant senior management functions, and ensure adequate resources.
2) *Upgrade Risk Management*
   - Incorporate financial risks from climate change into existing risk management framework across multiple elements (e.g. risk appetite, identification, measurement, monitoring, tools)
   - Include material exposures into stress tests and capital calculation processes
3) *Invest in Scenario Analysis Modeling* – the scenario analysis process requires the right data and analytics to adequately understand and evidence the impact of climate change. The process involves modeling a range of outcomes using internal and external sources. This challenging process may not be suitable for internal capabilities. Consider engaging external expertise and services to build the right solution. More specifically, we believe a state of the art scenario model should include:
   - Fully integrated transition and physical modelling
   - Rapid, coherent scenario expansion on any internal or external scenario
   - Bottom-up sector-specific methodologies for Oil & Gas, Utilities and Transport, which treat the energy system as an interconnected value chain
   - Advanced approach to demand elasticity, reflecting the extent to which different sectors are able to pass increased carbon prices onto their customers
   - Integrated approach to temperature alignment
   - Physical risk analysis with Global coverage of 70 million physical assets owned by 4 million companies
   - Ability to customize: scenarios; treatment of sectors; and individual companies' mitigation and adaptation plans
   - Fully transparent calculations, enabling you to understand the impact of all modelling assumptions.

III. Recommendations on policy initiatives and best practices for risk management and disclosure of financial and market risks related to climate change that support financial stability

We recommend the Subcommittee to engage with global central banks and supervisors to share best practices regarding policy initiatives and climate risk management. In 2017, the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) issued recommendations on risk management practices. In 2018,

a group of central banks, supervisors and international organizations formed the Network for Greening the Financial System (NGFS) to ensure that the financial system is resilient to climate-related risks. They recently published recommendations on monitoring climate risks, developing taxonomies, promoting disclosures, and incorporating climate-related risks into prudential framework. The recommendations by the NGFS and European initiatives explicitly focus on financial stability and can provide critical input to the Commission's future policy initiative on the topic.

IV. **Methods by which market participants' data and analyses can enhance and contribute to the assessment of climate-related financial and market risks and their potential impacts on agricultural production, energy, food, insurance, real estate, and other financial stability indicators;**

We recommend the following methods that can enable market participants' data and analyses to enhance and contribute to the assessment of climate-related risks and impacts across financial stability indicators (e.g. agricultural production, energy, food, insurance, real estate).

- Encourage sharing data on financial stability indicators – With the falling cost of collecting and storing data and improvements in computing powers and storage, more businesses can integrate their data collection strategies with IoT technology. Similar to how institutions share operational risk data in ORX, market participants' can establish a central agency for anonymizing and sharing data.
- Embrace innovation and technological development – Market participants can uncover huge learnings by enabling machine learning. For example, in agricultural production, farmers need to plan between wet and dry seasons so that they can plant their crops at the right time of the year to maximize yields. However, recent drastic changes in weather patterns render models based on empirical data useless. Machine learning can analyze real-time data to help farmers identify changes in climate and adjust their planting accordingly.
- Regulators can establish a central source for recommended environmental monitoring and information systems databases

V. **Financial and market risks arising from potential economic policy responses to climate change**

Different sectors are addressing climate risks with different underlying economic policies. For example, some energy and power markets are planning to embed a "social cost of carbon" that burdens carbon intensive resources with a higher cost structure in competitive wholesale markets. In sectors where policies are uncertain, financial and market risks will increase, and the overall cost to transition the sector will be higher than in cases where clearer sector-level guidance is provided. We recommend developing and applying a set of sector-specific models or templates that reflect the maturity of climate risk issues and mitigation approaches. An increased level of sector-specific analytics should help to reduce fluctuating market dynamics and limit issues such as fire sales or liquidity issues and give a clearer picture of asset-specific climate risks.

We hope the information set out in this letter provides helpful guidance on the issues and topics you have highlighted. Baringa Partners is available to provide additional guidance and respond to any further question the Committee or the Commission may have. We appreciate the opportunity to provide our comments on this critical topic.