

Report on setting up an AIFC Carbon Exchange in Kazakhstan

Task B5 of project “Green Financial System for
Kazakhstan”

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Contents

Introduction	3
1. Executive Summary	4
2. Link to Logical Framework	5
3. Trading activity in the KazETS to date	8
4.1 Governing Law and other regulations that obstruct carbon market development in Kazakhstan	8
4.2 Other aspects of the KazETS that hamper market development	9
4.3 Positive attributes	10
4.4 Trading statistics	10
4. Market Liquidity – Definition and Benefits	12
5.1 Definition	12
5.2 The benefits of a liquid market	13
5.3 Comparing EU ETS and KazETS liquidity indicators	13
5.4 Liquidity and the KazETS	15
5. Role of AIFC in streamlining trading in the KazETS	16
6.1 The AIFC’s special conditions that can be harnessed to boost KazETS liquidity	16
6.2 Favourable tax treatment	16
6.3 English common law and AIFC’s own courts & arbitration system	17
6.4 Ability to make own regulations	18
6.5 Close working relationship with International Financial Institutions	20
6. Challenges due to AIFC’s special status?	21
7. KazETS Regulatory Framework	22
8. Commodities or Financial Instruments?	24
9. Trading Instruments and Derivatives	26
10. Controlling market manipulation	28
11. Comparing International Carbon Exchanges	29
12. Setting up an AIFC Carbon Exchange	32
13. Conclusion	35
14. Acknowledgements	36

1. Introduction

A well-functioning Emissions Trading System (ETS) is essential for any country that wants to meet emissions reduction targets efficiently and at the lowest economic cost. The provision of a price signal that companies can use to guide investment decisions facilitates the efficient deployment of capital. To harness the full benefits that a market for carbon reductions can bring, a thriving service sector must be allowed to develop that includes trading, investment and broking services. Artificial restrictions that prevent the development of an efficient, deep and liquid carbon market need to be removed or modified and AIFC, in its unique position to make rules and attract foreign investment, can play a major role.

Without an efficient indication of the cost of domestic emissions reductions the Kazakh government's job of meeting their Nationally Determined Contribution (NDC) commitment under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC) will be made more difficult. For example, determining the relative value of NDC related international transactions without a price marker will be problematic. In addition, without a carbon price companies in Kazakhstan run the risk of direct regulation to cut emissions and investors will not be able to manage the risk of future carbon emissions cuts.

This report analyses the obstacles to development of an efficient carbon market in Kazakhstan and makes recommendations for how the AIFC can make a contribution to facilitating their removal and the ultimate success of the Kazakh carbon market.

2. Executive Summary

This document describes the considerable benefits to the liquidity and delivery of the Kazakh Emissions Trading Scheme (KazETS) associated with AIFC participating in emissions trading in Kazakhstan through its unique platform and via the development of a carbon exchange accessible to both domestic and international participants. The poor liquidity suffered by the KazETS can also be significantly improved by removal of barriers to trade that have been unintentionally created by certain rules governing the system. Those barriers are also examined and suggestions for change provided.

The conclusion reached is that the AIFC can play an important role in developing KazETS liquidity both indirectly, through incentivising and facilitating foreign participation in the KazETS, and directly, by using its rule-making capabilities to overcome some of the barriers created by the ETS rules. However, AIFC's ability to improve the KazETS is limited. Ultimately government backing of sensible rule changes and enforcement of the ETS rules as a whole is key to there being sufficient demand for AIFC's contribution to be ultimately successful.

Key recommendations are:

- Direct AIFC actions:
 - a Permit Over-the-Counter (OTC) trading of KazETS allowances in AIFC in order to foster the demand for exchange trading, with mandatory reporting of trades to the exchange. OTC trading is scheduled to be allowed from January 2018.
 - b Consider appropriate position limits for speculative activity to avoid the risk of market manipulation
 - c While the KazETS develops into a more vibrant market, facilitate the trading of EU Allowances (EUAs) in or through the AIFC to give both local and international companies the opportunity to gain experience of emissions trading.
 - d Make anonymised KazETS trade data available to the public (including OTC activity)
 - e Consider consolidating Kazakh commodities trading on one effective platform to maximise participation in KazETS trading both nationally and internationally.
- In addition to the PMR¹ and PETER recommendations, support and encourage KazETS law and regulation changes in time for the 2020 National Allocation Plan as follows:

¹ For the key takeaways from the PMR Phase 1 work, see: https://www.thepmr.org/system/files/documents/Final_Kaz_MofE_PMR%20PA_Jordon2015_GS_eng_2610.pdf:

- Adopt proposed amendments to the ETS legislation
- Further refine the ETS legislation, update and clarify the secondary legislation
- Address institutional capacity within the ME and supporting government institutions
- Develop and implement a long-term NAP to ensure a predictable market environment
- Further develop and improve the MRV system—including e-reporting, registry

- a Allow limited use of imported offsets for compliance with the KazETS
- b Allow use of EUAs or CNETS² allowances for compliance with KazETS
- c Allow the sale of KazETS allowances without proof of energy efficiency gains. This is scheduled to be allowed from January 2018.
- d Long-term: remove free allocation to Kazakh power generators and hold open auctions instead

3. Link to Logical Framework

This paper is closely linked to the Logical Framework developed as part of task A6.1 of this project. The focus of the Logical Framework is a dual one, both on what it takes to make individual green projects attractive and financially viable for project sponsors and what it takes to build an overall Green Financial System. The latter perspective is emphasized in the Flowchart below, which has been reproduced from Figure 3 of the Logical Framework document. Step 3 of the Flow Chart calls for an assessment of the existing incentive mechanisms to reward the positive externalities from green investment projects. The Kazakh ETS is a key such incentive measure as it sets a price for carbon and thus compensates for the positive externalities from GHG emission reduction activities. The incentives are especially directed at the companies within the oil & gas sector, the power sector and energy-intensive industries that are included in the KazETS as well as those that can be involved in domestic offset projects.

The more effective the ETS is at setting a price for carbon that is reflective of the abatement costs needed to achieve the NDC targets, the more private investors are able to rely on sources of finance at commercial rates and on commercial terms. Without the ability to sell excess KazETS allowances or registered offsets from successful GHG emission reduction projects at efficient exchanges, public subsidies could be needed as part of the green finance instruments in order to make such investments worthwhile. A well-functioning Emissions Trading System can be expected to deliver emissions reductions from the covered sectors most efficiently and at the lowest possible cost. Without a reliable carbon price signal such public subsidies could have to be provided via direct budgetary measures on the national and local level or as part of national

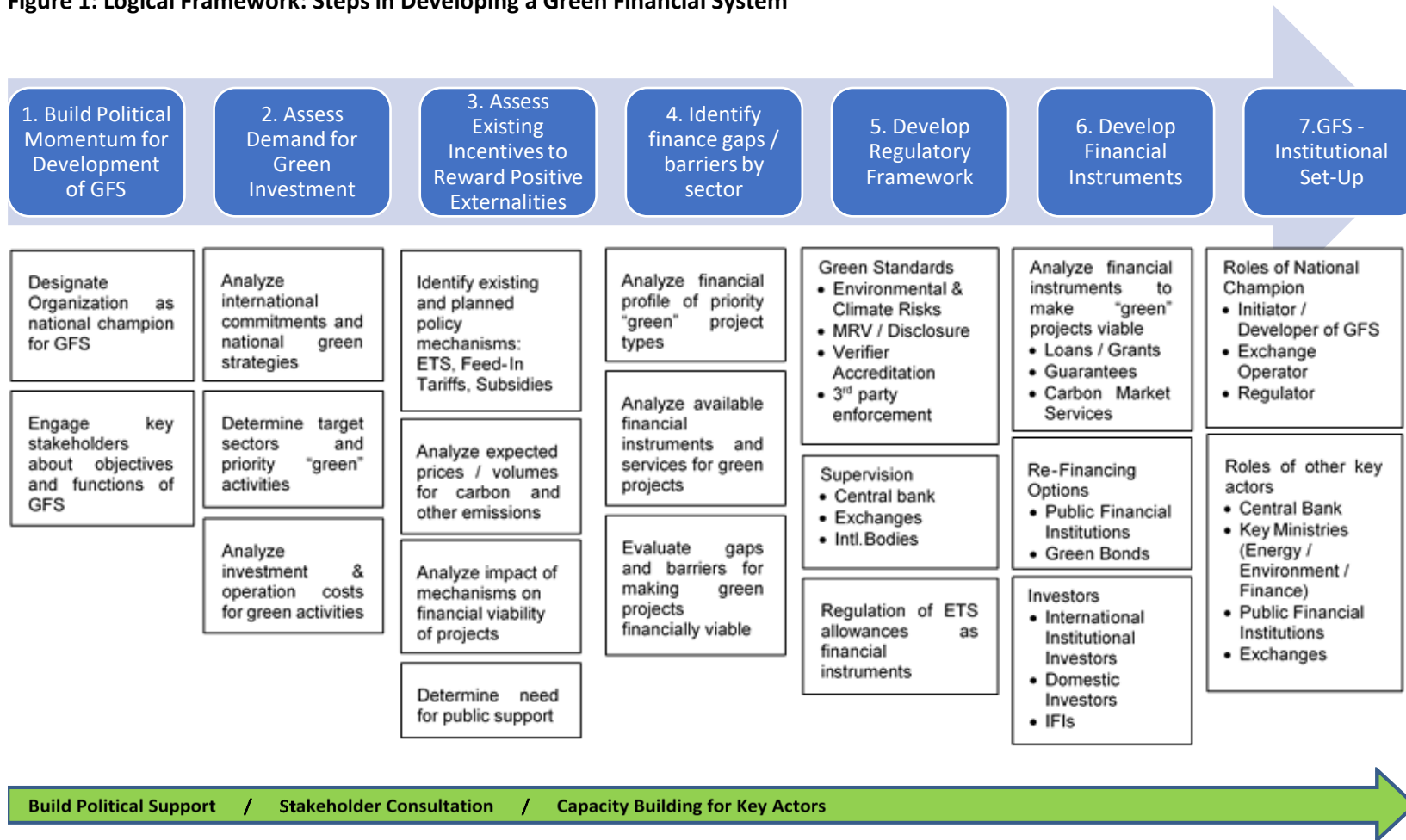
-
- Improve information availability and private sector readiness
 - Improve the offset system
 - Resolve the issue of trading restrictions

² Chinese National Emissions Trading Scheme



development programmes under the National Fund, administered by Baiterek or its subsidiary the National Development Bank of Kazakhstan.

Figure 1: Logical Framework: Steps in Developing a Green Financial System



4. Trading activity in the KazETS to date

While this paper is not intended to summarise the history and effectiveness of the KazETS (there are several papers and presentations that already do this effectively³) it is nonetheless useful to consider Kazakhstan's experience of emissions trading and to compare this to more established, larger emissions trading schemes, in particular the European Union's Emissions Trading Scheme (the EU ETS). This approach allows observations and examples to be drawn upon to assist readers in their consideration of the recommendations made in respect of AIFC launching a carbon exchange and assisting in KazETS liquidity development.

4.1 Governing Law and other regulations that obstruct carbon market development in Kazakhstan

By and large the laws setting up the KazETS provide a reasonable foundation although a few directly stand in the path of developing an active and efficient Kazakhstani carbon market. However, there are a few stand-out regulations that obstructed market efficiency during the previous trading periods, 2013 and 2014-15. Some of these have been addressed via changes to the Law of the Republic of Kazakhstan of April 8, 2016, No. 491-V, which is scheduled to take effect in January 2018.

- In previous trading periods, installations receiving free allocations could not sell any excess allowances unless they could prove that the excess was caused by a real reduction in emissions created by increased efficiency. This acted as a strong barrier to trade as this requirement caused there to be no, or very little, sell-side in the KazETS. This requirement is scheduled to be waived from January 2018, and this will help liquidity in Kazakhstan's carbon market.
- In previous trading periods, all KazETS Allowance trades had to be made on an exchange. Cheaper Over-the-counter (i.e. bilaterally contracted) (OTC) trades were not permitted. This dis-incentive to participation in the carbon market is scheduled to be removed from January 2018.

³ Kazakhstan: An Emissions Trading Case Study – By: The Environmental Defence Fund, International Emissions Trading Association and CDC Climat (Lara Dahan, Emilie Alberola, Katherine Rittenhouse, Peter Sopher, Daniel Francis, Jeff Swartz, 2017 & DEHST Country Study – Kazakhstan & IETA: Greenhouse Gas Markets 2014: 'Kazakhstan: Learning by doing' - Robyn Camp and Aleksey Cherednichenko (USAID).

- No auctioning. By giving companies everything they need for free and not auctioning any allowances, price discovery, board-level attention to carbon as a business expense and traded volumes are all negatively impacted.
- In previous trading periods, KazETS Allowances were not permitted to be banked between years. This *should* cause them to be sold by year-end and the market to price carbon very efficiently but for the requirement to demonstrate energy efficiency improvements as referred to in the first bullet above. From January 2018 the transfer of allowances from previous years within the same trading period will be allowed.
- In previous trading periods, KazETS Allowances were allocated using the grandfathering method, essentially providing many companies with free allowances for all their carbon needs unless major increases in production levels occurred. From January 2018, benchmarking has been introduced as a new allocation method alongside grandfathering for companies that choose that method as their default method of allocation. At the very least this should increase the supply of allowances from companies that outperform their respective benchmarks. It should be noted that new entrants will receive free allowances from the new entrant reserve.

4.2 Other aspects of the KazETS that hamper market development

Aside from the legal basis, there are a number of other features of carbon trading in Kazakhstan that differ from the EU ETS example as follows;

- Some installations have yet to submit verification reports, so governance and enforcement are issues as well as future NAPs being difficult to set without verified data on underlying emissions. Very few fines have been issued to date for non-compliance with the rules of the scheme.⁴
- Government increasing the cap with additional free allocations⁵
- Trading so far is a series of 'English' auctions (see "Trading statistics" section below)
- There are 20 commodity exchanges in the country, so members of exchanges are not all focussed in one or two places. However only one of those platforms listed Kaz Allowances, so for buyers and sellers the choice is limited.
- Registry accounts can only be opened by locally-registered companies / rep offices that have a tax identification number – this restricts foreign participation.
- No non-Kazakh offsets allowed to be used for compliance.
- So far, few Kazakh offset project have been developed⁶.

⁴ https://www.dehst.de/SharedDocs/downloads/EN/publications/country-study-kazakhstan.pdf?__blob=publicationFile&v=2 Page 15, 'MRV Challenges': "There are still some companies who miss all deadlines to submit their reports."

⁵ https://www.dehst.de/SharedDocs/downloads/EN/publications/country-study-kazakhstan.pdf?__blob=publicationFile&v=2 Page 14, 'Allocation Challenges'

⁶ To date, one domestic offset project has been registered, the Zhambyl hydro power plant, and its first credits have been issued. Source: Vincent Duijnhouwer (EBRD). EBRD has worked with Yerementau

- System overallocated, so little incentive to get involved with trading because most companies are given >100% of their requirements for free
- Trade data is hard to obtain without paying for it.
- Some errors in reporting methodologies remain.

4.3 Positive attributes

- No VAT on carbon transactions
- Futures trades and other derivatives are already permissible as KazETS allowances are defined as a commodity⁷
- An unlimited number of domestic offsets can be used for compliance

4.4 Trading statistics

Despite the limitations, there were a handful of trades (in the form of ‘English’ auctions whereby one or more bidders compete to buy the volume of Kaz Allowances on offer such that there is only one ultimately successful buyer in each auction) that took place between 28th March 2014 and the 7th August 2015 as summarised in the graph below.

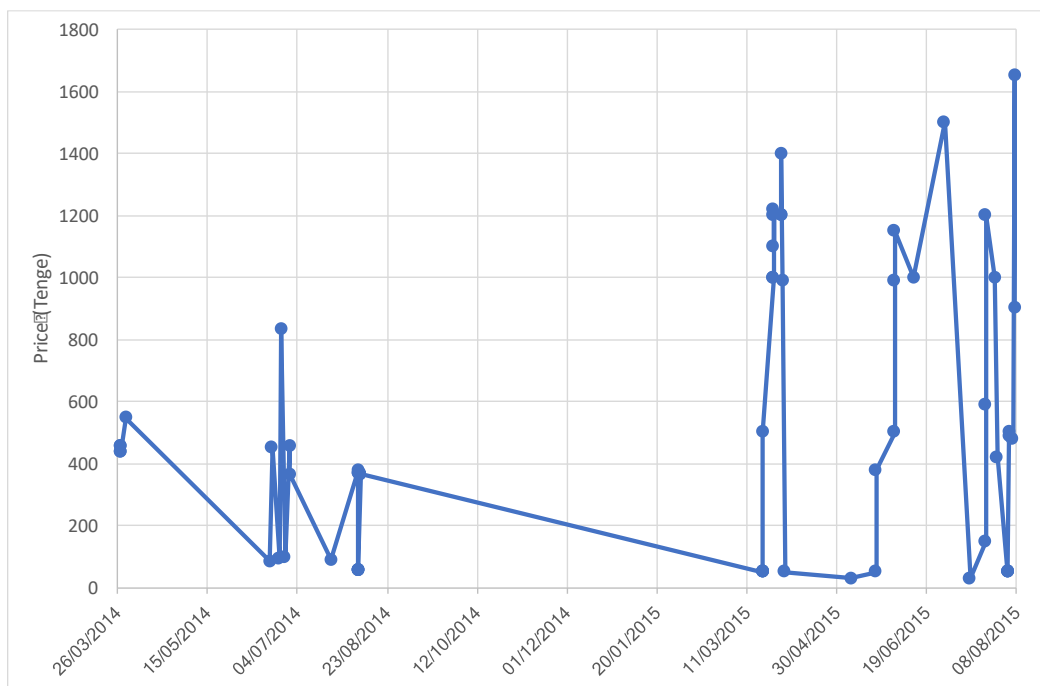


Figure 1: Graph of KazETS carbon trades on Caspi Exchange (aka COMEX). Source: www.comex.kz

wind farm that has been submitted for registration as an offset project. Details are emerging. Source: Friso de Jong (EBRD).

⁷ Telephone interview with Vadim Ni, 11/08/2017, Telephone interview with AIFC / AIX (Amin Turgulova, Olivier Gueris), 15/08/2017.

Only the price data is graphed because volume data is not publicly available but The German Emissions Trading Authority (DEHSt) reports that 3.25Mt were traded during the whole of Phase I & II⁸. We also know from press reports at the time that the first trades on 28th March 2014 were an auction of 32,094 KazETS allowances sold by the Government to 4 successful bidders (out of 5 in total). The circumstances of these trades are somewhat opaque, given that the Government had no provisions for auctions in the KazETS law, but they are believed to have been arranged to demonstrate that the market was functional⁹. The total number of trades during Phase I & II was 66 (according to Caspi) and 75 (according to the DEHSt report¹⁰). The price range was a low of 30 Tenge (traded on 8th May 2015) to a high of 1,650 Tenge (traded on 7th August 2015). Note: DEHST reports a trading low of 10 Tenge.

In 2013, Caspi JSC (aka COMEX) was officially appointed as the only national exchange platform for trading and auctioning emission allowances in Kazakhstan by the Ministry of Environment Protection and Water Resources of the Republic of Kazakhstan¹¹. Because the law stipulates that all emissions trades must be via an exchange and Caspi is the only exchange to list carbon credits, we can (reasonably) confidently say that 66 trades is the total of 3 years of emissions trading activity in Kazakhstan.

The enormous difference between the highs and lows of the market, the lack of fundamental drivers behind the price variations, the low total traded volume and the low number of trades allow us to conclude that liquidity in the KazETS was very poor. In contrast, in the EU the Intercontinental Exchange (the 'ICE') (the largest of the 3 exchanges handling around 85% of cleared EU ETS trades) trades more than 15Mt and more than 1,500 trades *per day* on average. The ICE figures exclude trades taking place on competing exchanges and bilateral trades that are not captured by exchanges. Even allowing for the relative market size differential (the underlying market size of the EU ETS is roughly ten times the size of the KazETS) the difference in the level of liquidity is very large. The underlying reasons for the poor liquidity in the KazETS are summarised in section 3.2 above, what constitutes good liquidity is explored in the next section.

⁸ https://www.dehst.de/SharedDocs/downloads/EN/publications/country-study-kazakhstan.pdf?__blob=publicationFile&v=2 Page 13, 'Trading of Kazakh Emissions Allowances'

⁹ Telephone interview with Vadim Ni, 11/08/2017.

¹⁰ https://www.dehst.de/SharedDocs/downloads/EN/publications/country-study-kazakhstan.pdf?__blob=publicationFile&v=2 Page 13, 'Trading of Kazakh Emissions Allowances'

¹¹ Telephone interview with Vadim Ni, 11/08/2017.

5. Market Liquidity – Definition and Benefits

5.1 Definition

The effectiveness and efficiency of a traded market can be indicated by its level of liquidity. Markets are said to be liquid or not liquid and by-and-large the term is subjective. However, a liquid market has certain characteristics that are more easily identified as being present or not and therefore can be used in an evaluation of whether or not a given market is liquid. The characteristics are as follows;

Transparency - good liquidity means that market participants can readily obtain market price information: bids, offers and trades. Moreover, the reasons for price movements can be readily ascertained.

Market depth - a liquid market has sufficient volume (i.e. quantity of product) on both the bid (buy side) and the offer (sell side) such that the average market participant will not significantly move the price of the market when executing their desired amount of buying or selling.

Narrow bid / offer spread – a liquid market will have a very small gap between the best price to buy and the best price to sell, such that the cost of reversing a trade (should a trader decide they would rather not own what they have just bought or vice-versa) is minimal.

Low transaction costs – a liquid market will have very low transaction costs. Low transaction costs are typically a *consequence* of good liquidity because there is a big enough market that there is lots of competition between service providers. However, a market with high transaction costs will not foster good liquidity. The willingness of traders (market-makers) to get involved is reduced as it is more difficult to make a profit when the return from a market move is not substantially more than the cost of transacting. In a high transaction cost environment companies that need to transact will limit their transactions to the smallest number possible.

Low barriers to market entry – companies should not be prevented from trading by prohibitive regulatory or one-off market-access costs.

Large number of market participants – a liquid market requires many market participants expressing their view of market prices through their transactions in order for there to be continuous trading. A large number of companies with a need to buy or sell increases the chance that there is someone in the market that really wants to buy and someone that really wants to sell at all times that the market is open. A large number of market participants competing for business benefits the other key liquidity indicators.

Standardised product – good liquidity comes from everyone trading the same thing. To the extent there are several versions of the same product (e.g. the same underlying product but differentiated by alternative conditions of sale or forward settlement dates) then there are effectively several markets, not one. The available liquidity will thus risk being split across the different markets.

5.2 The benefits of a liquid market

Liquidity is desirable because it bestows the following benefits on a market:

- Only competitive markets are likely to be liquid, so competition and liquidity go hand in hand. Competition = efficiency
- Trust develops, and the market price becomes a benchmark to measure performance and potential for investment.
- Risk management products quickly evolve in liquid markets such as longer-term forward trades and options.
- Company boards take their carbon risk seriously if the market for carbon is real and trustworthy: i.e. if it is transparent, relatively stable and provides a trusted indication of what the cost of buying or selling carbon will be.
- Companies are more inclined to risk-manage (hedge) in liquid markets because they know it is easy-to-do, that the cost of doing so is fair and their cost of action (transaction costs) compares favourably to the benefits of hedging to reduce P&L volatility.
- Governments feel less pressure to intervene in a market if there is evidence that it is functioning correctly and efficiently. This reduces the risk of unexpected regulatory changes that can have price volatility consequences.
- The price of a liquid, efficient market will move with the fundamental drivers, e.g. the growth rate of the economy, changes in interest rates, or fossil fuel prices.

Examples of obviously liquid markets are crude oil & FX. There are thousands of companies globally that want to trade in them and 100's that want to offer services to trade. Trading is 24 hours (although price movement is typically concentrated on European and US opening hours), bid/offer spreads are tiny compared to the value of the underlying and transaction costs are similarly small. These markets are liquid and efficient. Smaller markets have to work harder to achieve a semblance of liquidity, but it is worth it to gain the benefits as discussed in section 3.2.

5.3 Comparing EU ETS and KazETS liquidity indicators

Defining a market as liquid is a qualitative exercise but, as the table below shows, an objective assessment is easier when drawing a comparison with another similar market. The table

summarises the status of the key liquidity indicators discussed above for each of the EU ETS and the KazETS markets.

Table 1: Comparison of EU ETS and KazETS key liquidity indicators

Liquidity indicator	EU ETS performance	KazETS performance
Transparent pricing	Good – exchange prices can be accessed for free (with 15 min delay). For those willing to pay, live prices are available.	Poor – no bids and offers are published, trade prices are published for free on comex.kz but volumes are not
Market depth	Excellent	Poor – non-existent
Narrow bid / offer spread	Excellent – prices often 1 €cent apart	Poor – non-existent
Low transaction costs	Good – although one exchange dominates so costs could arguably be even lower than they are.	Unknown – there is no publicly available information on transaction costs
Low barriers to market entry	Excellent (but getting worse) – The EU ETS was designed to allow anyone to own carbon allowances, however financial regulation is about to place onerous requirements on some participants.	Poor – The only way to access the KazETS market is through the Caspi exchange.
Large number of market participants	Excellent – on average 21 participants are reported to bid in the daily auctions and up to 100 participants get involved in trading during a typical trading day. There are around 4-5,000 companies in the EU ETS, approximately half of those have a need to buy for compliance.	Poor - There appears to be no direct participation of installations on the Caspi exchange and only 8 brokers registered to deal in Kaz Allowances. ¹² The Kazakh ETS covered 178 companies in 2013 and 166 companies in 2014/15. ¹³ From 2018 140 companies are expected to be covered. ¹⁴
Standardised product	Excellent – the market has coalesced around a single spot and forward trading standard and OTC contract.	Excellent – there is only one product on one exchange with a single set of trading terms (this has other drawbacks however).

¹² <http://comex.kz/en/brokers>

¹³ <https://www.thepmr.org/country/kazakhstan-0>

¹⁴ <https://icapcarbonaction.com/en/ets-map?etsid=46>

5.4 Liquidity and the KazETS

In 2016 the KazETS was suspended while certain inefficiencies, mainly relating to Monitoring, Reporting and Verification (MRV), but also levels of free allocation were revised. At the time the KazETS was massively oversupplied and because of Kaz Allowance banking restrictions (Kaz Allowances not used in a compliance period cannot be banked for future use) Kaz Allowances should have been priced very low or even at zero. Take for example Phase I (2005-2007) of the EU ETS that priced at €0.01 in its final 12 months due to oversupply that could not be banked into the following Phase. Even in a balanced ETS (where supply is approximately equal to demand) a recession would make demand almost non-existent and any sellers even more keen to sell. If the KazETS trading market was functioning efficiently the price of Kaz Allowances would have adjusted to the circumstances and priced at such a low level that the presence of an ETS would not have represented a significant financial burden to installations. This would have allayed any fears that the KazETS could deepen the recent Kazakh recession.

If the KazETS was designed with trading liquidity in mind the potential trading volumes would reflect those in other emissions trading schemes. In the EU ETS, for example, approximately 1.75 billion tonnes of emissions are captured by the scheme and the market trades around 15 million tonnes per working day on average. This means EU Allowance turnover is around twice the underlying market size. If this were translated to the KazETS, that is expected to capture 147 million tonnes when it is scheduled to restart in 2018¹⁵, annual trading volumes could be 300 million tonnes, or just over 1 million tonnes per day (a 100-fold increase on performance to-date).

¹⁵ Ministry of Energy of the Republic of Kazakhstan, Kazakhstan Emission Trading Scheme and implementation of the capacity building activities under PMR Gulmira Sergazina, Director, Climate Change Department, October 2015: https://www.thepmr.org/system/files/documents/Final_Kaz_MofE_PMR%20PA_Jordon2015_GS_eng_2610.pdf

6. Role of AIFC in streamlining trading in the KazETS

As highlighted above, liquidity in the KazETS was poor in previous trading periods, and the consequences of low liquidity have the potential to be felt across the economy. Following its suspension, the KazETS is expected to resume in 2018 but its credibility will have to be built both domestically and internationally. While there are a number of reasons for poor liquidity that stem from existing legislation (see recommendations in section 8 for which of these should be changed in the interest of developing liquidity) there exists an opportunity for the AIFC to help overcome some of the KazETS market's inefficiencies.

6.1 The AIFC's special conditions that can be harnessed to boost KazETS liquidity

The AIFC is acting in a special economic zone that is set up with the specific goal of attracting foreign investment to Kazakhstan¹⁶. The cost of doing business in a foreign country can be high and can dissuade companies from allowing their relevant business units to set up business in certain jurisdictions. Anything that can lower the barriers-to-entry to enter into transactions in a given jurisdiction increases the probability of business being attracted to that jurisdiction. The special features of the AIFC that will help Kazakhstan attract overseas investment are:

- Favourable tax treatment (zero corporation tax for entities registered in the special economic zone for 50 years)
- English Common Law and own courts & arbitration (AIFC will be a separate jurisdiction)
- Ability to make their own regulations that can be different from Kazakhstan's
- Close working relationships with International Financial Institutions (IFIs)

Each of these features can be of assistance to the KazETS as follows;

6.2 Favourable tax treatment

Generally, unless there is a tax treaty to avoid double taxation, the requirement to pay Kazakhstan taxes would reduce the profitability, and thus the appeal, for foreign companies to set up to take risks in the country. Firstly, because there is the obvious reduction in profit but secondly, should a company make a loss, there isn't necessarily a profit in other business that they do in Kazakhstan to offset the loss and so obtain a tax relief. Such tax-free trading zones are not uncommon throughout the world so had the AIFC not gained this status then investment will be more strongly attracted to other jurisdictions. Tax-free status alone will not attract foreign

¹⁶ For example, it is expected that Chinese companies will use AIX as a gateway to other markets, in part due to AIX's link with the Shanghai Stock Exchange

participation in the KazETS, but it is a vital ingredient in the mix of features that will attract foreign investment.

Reducing the tax burden can only be a positive for the development of markets. In the UK, for example, the trading of EU Allowances on the Intercontinental Exchange (ICE) is exempt from VAT. This is a crucial starting point for any high-volume trading activity as VAT will ultimately be reclaimed by traders and in the case of exchange trading would be an unnecessary burden if it were applicable. Fortunately, carbon credit trading in the KazETS is already exempt from VAT, so this small efficiency is in its favour already.

6.3 English common law and AIFC's own courts & arbitration system

Common law is the backbone of the world's largest trading centres. It allows International Financial Institutions, investment banks and other major trading firms and investors, that are familiar with transacting under the jurisdiction of common law, to quickly and conveniently understand the legal risks they are taking. There is an additional benefit in the form of a cost saving, companies can use in-house legal teams or less-specialised external counsel. The use of AIFC's own courts and arbitration system creates the expectation that cases be heard quickly, efficiently, and fairly. The expectation of an efficient ruling, not necessarily set by precedent, will encourage companies to settle before court action is even taken. English common law dramatically lowers the barrier-to-entry for foreign companies, in particular some of the world's largest carbon market liquidity providers - the international oil firms, and thus increases the prospects for liquidity.

In the context of emissions trading there are two specific benefits;

1. The International Emissions Trading Association's benchmark trading agreements that govern Over-The-Counter (OTC) emissions trading (i.e. bilateral trading) are written in English and based on common law. These are adapted by IETA's legal working group for specific emissions trading jurisdictions and can be relatively easily adjusted to accommodate the specifics of KazETS trading in AIFC's jurisdiction. The same applies to the International Swaps and Derivatives Association master agreements (commonly used by financial institutions and trading houses) that have emissions trading annexes to enable companies to trade carbon emissions. Neither can be reliably used in Kazakhstan at present.

Note: the Kazakh emissions trading scheme law dictates that only exchange-based emissions trading is possible in Kazakhstan, so the use of IETA and ISDA OTC trading documentation may not be required. However, OTC trading documentation becomes relevant when considering the OTC trading recommendation in section 5.4 of this report, see below.

2. The ICE exchange in London uses English common law to write and govern its emissions trading rules and general trading contracts. The use of English common law in AIFC enables the quick and efficient implementation of KazETS exchange trading documentation by the Astana International Exchange (AIX) by either adapting, or using as a guide, this existing material. Not only does this simplify AIX's job when setting up

emissions trading, it makes life simpler for international companies because they can quickly assimilate, and sign-up to, trading documentation that is already familiar.

Financial institutions are risk averse. A small emissions trading scheme like the KazETS will not be considered by them to likely be a profitable-enough enterprise to make the effort and to take the risk of Kazakh law and Russian documentation. English common law lowers this particular barrier to participation and is therefore a well-targeted feature that can only encourage participation and the development of liquidity in the KazETS.

6.4 Ability to make own regulations

In general, the financial and administrative independence of the AIFC is important for building confidence that all market participants will be treated fairly and that interference by special interests will not hamper the efficient functioning of the market place. There will be a number of other advantages, such as financial netting arrangements, that will benefit from the ability of the authorities to quickly adopt appropriate, market-friendly rules.

In a carbon trading-specific context there are a number of areas that the AIFC might consider using their rule-making capabilities to improve the functioning of the KazETS as follows:

- Carbon position limits – there are currently no rules to prevent companies buying a controlling interest in the available carbon credits. AIFC can at least control the positions of companies buying carbon in their jurisdiction to avoid the risk of market manipulation (see section 10 for more detail of ways to avoid carbon market manipulation).
- Facilitation of physical delivery of carbon credits – registry accounts are a pre-requisite to physical delivery and currently only companies with a local tax number can open them. Registry account opening could be more complicated as the application is not under English common law, so the obligations of account holders will need to be assessed by a specialist lawyer before a company will commit itself to opening one. The AIFC can facilitate this activity by creating rules that allow companies to act as intermediaries to registry accounts or act as trustees of carbon credits held in a co-mingled registry account.
- Allowing the OTC trading of carbon credits. The EU ETS has its origins in the OTC market. The exchanges and derivatives came after the OTC markets had demonstrated that there was demand for them and the exchanges perceived a business opportunity. All other markets that were not created by legislation began as OTC markets, so it makes no sense for carbon markets to be forced to trade on exchanges prematurely. Such a requirement creates an artificial barrier to market entry and innovation. By the AIFC creating rules that allow companies to trade carbon credits OTC, *including* domestic Kazakh firms, there are fewer barriers to market entry. For example, the OTC markets have the following benefits:
 - zero exchange membership fees
 - zero exchange dealing fees
 - zero exchange clearing fees
 - zero brokerage fees (where deals are agreed bilaterally)
 - flexible contract terms (delivery dates, payment terms, events of default etc.)
 - allows the market to determine what the standardised terms should be

The low cost and low administrative burden of OTC trading, thanks to organisations like IETA that draft trading documentation for all comers, increases the likelihood that companies will participate in emissions trading activity. Not only will companies be more likely to enter the market, they will be more likely to enter the market regularly, in smaller trades, which is essential for good liquidity.

- Allow, and facilitate, the trading of EU Allowances or CNETS¹⁷ allowances (and, over time, any other liquid carbon market) in Kazakhstan. This can be done by allowing the trading of OTC forwards or exchange-listed futures in the AIFC (spot cannot be traded as physical delivery will require a registry account in the EU or China, however it may be possible for a third party to open that account and ‘store’ EUAs / CNETSAs for Kazakh companies). The EU ETS is the world’s most liquid carbon market, CNETS will be the world’s largest emissions trading system. Trading foreign ETS allowances in Kazakhstan could serve several purposes:
 - a Familiarise Kazakh companies with the trading of carbon.
 - b Facilitate the use of the EUA / CNETSA market as a dirty hedge in times of low liquidity in the KazETS.
 - c Generation of liquidity in the KazETS as companies trade spreads between the 2 markets.
 - d Potential for the use of EUAs or CNETSAs as a carbon credit of last resort. By allowing companies to use other ETS allowances for compliance – which would require a change in Kazakh law – the confidence that companies can always buy the carbon they need for compliance will increase and the prevailing EUA or CNETSA price will act as a price ceiling.
 - e Facilitating EUA trading would allow a greater variety of companies to access EUA trading (e.g. companies that are set up to trade in the AIFC that are not transacting EUAs in Europe). This could bring carbon business and profit to the AIFC.
- Where practical, allow / facilitate the listing of KazETS carbon futures in Europe or China on an existing (or in the case of CNETS, prospective) platform.
- Provide a more permissive trading environment for commodities generally or carbon specifically. Most major investment banks have withdrawn from physical and in many cases even financial commodity trading because the capital requirements to do so in Europe and the US are onerous. The AIFC has the freedom to ignore that development.
- In Europe the historic ease of opening EUA registry accounts and the subsequent ease of transferring high-value carbon credits from one account to another (with zero transport cost and zero transport time) has, in the past (and to a lesser extent today) made the EU ETS the money-laundering commodity of choice and has caused the entire EUA registry account system in Europe to be suspended. As noted in “Commercial laws of Kazakhstan. An assessment by the EBRD”¹⁸ the anti-money laundering legal framework in Kazakhstan

¹⁷ Chinese National Emissions Trading Scheme

¹⁸ <http://www.ebrd.com/cs/Satellite?c=Content&cid=1395242454536&pagename=EBRD%2FContent%2FDownloadDocument>

has many areas that need to be improved to ensure the country's efforts to curb money laundering and terrorist financing are effective. The AIFC must use its rule making capabilities to ensure that the opportunity for criminals to launder money is denied or negated as far as possible.

- If KazETS allowances were defined as financial instruments (see section 8 for further explanation of the pros and cons of doing so) the AIFC has the ability to exempt certain classes of participants or certain types of trade from direct regulation by the financial regulator. In terms of building liquidity, the lower the administrative burden of regulation the better.

6.5 Close working relationship with International Financial Institutions

The World Bank and EBRD have been trail blazers in the context of international carbon markets. For example, the World Bank's Partnership for Market Readiness (PMR)¹⁹ and the EBRD's Preparedness for Emissions Trading in the EBRD Region (PETER)²⁰ initiatives have provided valuable insight into the effectiveness of the KazETS regulations and have made a positive impact on the prospects for rule change for the re-launch of the KazETS in 2018. The close working relationship with IFIs can be harnessed by the AIFC to streamline emissions trading in the KazETS by leveraging their extensive experience of global emissions trading systems and the support that they have given to a wide variety of nascent emissions trading schemes and offset projects. For example, the World Bank set up the Prototype Carbon Fund (PCF) to mobilise capital, including private capital, to be deployed from the very first carbon fund into some of the first carbon reduction projects to qualify as Clean Development Mechanism (CDM) projects, registered by the UNFCCC. The World Bank went on to fund several market capacity building activities, including three rounds of the Pilot Auction Facility (PAF) that provided funds to CH₄ and N₂O greenhouse gas emissions reduction projects.

The experience and capacity of IFIs in the carbon market space is invaluable and a close working relationship will help build momentum behind the first offset project registrations (for example, EBRD is working with the Yerementau wind farm project that has recently been submitted for registration. Such activity paves the way for more private investment in Kazakhstan's offset sector. However, it should be noted that to maintain the integrity of the cap, adequate measures must be taken to avoid double-counting where offset-generating projects, for example renewable energy projects, displace carbon emissions elsewhere in the economy, e.g. fossil fuel power generation.

The IFIs can further help by spreading the word to the wider investment community about AIFC's contribution to the evolution and tradability of the KazETS, including the benefits of AIFC's permissive commercial environment.

Finally, the IFIs will help ensure that the AIFC makes good decisions that are in the interests of both the Kazakhstan Government and the companies expected to come to Kazakhstan to do

¹⁹ <https://www.thepmr.org/country/kazakhstan-0>

²⁰ <http://ebrdpeter.info/>

business for the first time. Rules and regulations put in place by AIFC to facilitate carbon trading can be strengthened by the influence, advice, experience and fairness of the IFIs.

7. Challenges due to AIFC's special status?

When talking about the best ways to attract foreign interest in the KazETS it is important to not lose sight of the fact that the KazETS exists to help Kazakhstan reduce its carbon footprint. Therefore, the majority of the liquidity in KazETS trading should be expected to come from KazETS installations seeking to take advantage of the enhancements that AIFC's special status brings to the day-to-day operation of the KazETS. As such it is essential that domestic companies are not disallowed or disadvantaged in any way when it comes to trading Kazakh carbon within the AIFC territory or on the AIX. Fortunately, it is anticipated that the AIX will be open for business to domestic Kazakh companies²¹.

Trading in the AIFC may be more permissive than in Kazakhstan generally (see last bullet in section 5.4 '[Benefits of] Ability to make own regulations') so KazETS trading in AIFC could run the risk of undermining domestic legislation that regulates KazETS trading. To avoid a legal quagmire and distrust in the KazETS market and / or the AIFC this risk should be avoided at all costs. However as described in section 9 below, there are no obvious advantages to regulating KazETS trading as anything other than as a commodity.

Other considerations include any competition issues that may arise because AIX has competitive advantages over purely domestic exchanges. Due to its special status, AIX will be able to more easily attract foreign participation. Furthermore, depending on its domestic tax status, it has to be confirmed that AIX fulfils the requirements (incl. tax identification number) to open a registry account, which is essential for making physical deliveries of KazETS allowances in Kazakhstan.

²¹ Telephone interview with AIFC / AIX (Amin Turgulova, Olivier Gueris), 15/08/2017.

8. KazETS Regulatory Framework

Section 4.1 entitled 'Governing Law and other regulations that obstruct carbon market development in Kazakhstan' at the beginning of this paper summarises the features of the KazETS laws and regulations that differ from the EU ETS and that stand in the way of the development of carbon trading in Kazakhstan. The section that followed sought to explain the characteristics of good liquidity. By combining the two sections a list of the main characteristics standing in the way of the development of liquidity in the KazETS, in order of importance, can be compiled.

Note: the list does not include the changes that are important to a meaningful ETS, such as enforcement, long-term certainty and firm & meaningful caps because they are pre-requisites expected of any cap-and-trade system. Without these basic pre-conditions the Kazakh ETS risks being obsolete and there would be no point in trying to build liquidity. Fortunately, a number of recommendations made in the Partnership for Market Readiness study of the KazETS and the US AID-led Kazakhstan Climate Change Mitigation Program have been accepted by the Kazakh government, so these pre-conditions are already recognised and are being legislated for.

Rule changes that will enhance KazETS liquidity in order of importance:

- i. Electricity utilities should not be given a free allocation, and their share of free allocation should be auctioned by the Government, on a daily basis, to all-comers to the KazETS. Nothing will encourage market participation, and therefore liquidity, better than a strong need to buy and a regular, certain supply.
- ii. Allow the strictly limited use of international offsets, in some tightly restricted form to avoid the oversupply issues that have affected the EU ETS, in the KazETS. Nothing builds capacity and know-how in a traded market better than a profit motive. Allowing international offsets in will encourage companies to spend money on working out how to get carbon business done in Kazakhstan.
- iii. KazETS allowances freely allocated to installations should not be restricted from sale by the requirement to prove that the allowances are excess to requirement because the installation has increased its energy efficiency. Without this change it is likely that the supply side of the KazETS will be almost entirely restricted to Government auctions (that aren't even allowed under current legislation).
- iv. The requirement to trade all KazETS allowances on an exchange should be removed and replaced with a system that allows both OTC and exchange trading in order to foster competition and innovation. To avoid the negative effects of a potential loss of transparency a requirement to report all emissions trades, e.g. through the registry or an exchange, can be implemented. From January 2018, the emissions trading registry is scheduled to be re-established in the form of an online database to better monitor emissions and to ensure more accurate accounting.

- v. Anonymous trade data (i.e. all bids, offers and trades but not confidential information, i.e. counterparty names) should be made publicly available so that participants can draw their own conclusion on the likely direction of travel of prices based on apparent supply and demand.

9. Commodities or Financial Instruments?

In the context of this paper the question is more appropriately framed: what financial regulation definition will lead to greater liquidity in the KazETS? KazETS allowances are currently defined as commodities under Kazakh law, which means that anyone can freely trade KazETS allowances and derivatives thereof.²² The existing definition and associated legislation is very permissive and therefore is not a barrier to liquidity.

If KazETS allowances were defined as a financial instrument, as EUAs will be in Europe once MIFID II becomes operational at the beginning of 2018, carbon trading would run the risk of being caught up in more complex regulatory reporting and capital requirements as well as eligibility-to-trade rules. This means that regulating carbon allowances as a financial instrument in Kazakhstan would likely make it more difficult for companies to participate and would therefore act as a barrier to liquidity. While exemptions can be drafted to counter this negative effect, the better outcome for liquidity is to retain the current definition as a commodity.

While definition as a commodity may negatively impact the ability of some companies to participate in the Kazakh carbon market, for example the Chinese and Turkish banks²³, the main actors in international carbon markets are the international oil majors, electricity utilities and commodity trading houses. All of which are commodity firms and therefore pre-dispositioned to favour commodity markets over financial markets.

Example: financial regulation can have a big impact on markets. The vast majority of investment banks have ceased trading all commodities in Europe because post-financial crisis capital requirement regulations mean that they can no longer make their target return on capital in the sector. As a result, they have withdrawn from it.

If carbon being defined as a financial instrument is detrimental to the prospects of liquidity, why has Europe taken this path? The main reason to define EUAs as financial instruments was an attempt to combat VAT fraud and theft of EU Allowances and Certified Emissions Reductions (CERs). The reality is that the proposal to regulate spot carbon as a financial instrument was a knee-jerk reaction to a problem that no longer exists thanks to a number of measures taken to improve the applicable VAT regulations and registry security (including account opening procedures). From this perspective, the classification of carbon as a financial instrument by the Markets in Financial Instruments Directive (MIFID²⁴) II is entirely unnecessary. No other spot market in Europe is regulated as a financial instrument and the generous exemptions in relation

²² Telephone interview with Vadim Ni, 11/08/2017.

²³ http://turkishcarbonmarket.com.server11.firstfind.nl/Carbon_Market_Regulation_and_Oversight_-_International_Experience_and_Considerations_for_Turkey_FINAL_Nov14.pdf

²⁴ The Markets in Financial Instruments Directive is the EU legislation that regulates firms who provide services to clients linked to 'financial instruments' (shares, bonds, units in collective investment schemes and derivatives), and the venues where those instruments are traded.

to carbon trading activity suggest that the EU lawmakers belatedly recognise that there is no need to specifically regulate all carbon trading. The exception to this rule is financially-settled derivatives and carbon traded on Recognised Investment Exchanges (although the rules only apply to reporting of the latter, not the trading, so long as it is trading for 'own account'). Regulation of financially-settled derivatives activity is important to protect the participants in European carbon markets and therefore the integrity of the system. As a result, financially-settled derivatives have been subject to financial regulation since the Investment Services Directive (ISD) was originally adopted in 1993.

AIX already has plans to trade commodities starting in 2018 or 2019 so, other than for expediency, there is no reason to change the legal definition of KazETS allowances so that carbon trading can take place in the AIFC.²⁵

It is also worth pointing out that in Europe, pre-MIFID II, certain types of trades in carbon allowances (the trade of which is currently unregulated) are classified as financial derivatives and are therefore subject to regulatory oversight (i.e. carbon futures, financial swaps and options – both financially & physically settled). This means that commodities actually become financial instruments when their derivatives are traded. If the Chinese and Turkish regulatory systems work in the same way, or if AIFC adopts the same rules, Chinese and Turkish banks should be permitted to trade in carbon derivatives even if they cannot trade in the physical underlying commodity.

In summary, the current legal definition of Kazakh carbon credits as a commodity is recommended as the best option.

²⁵ Telephone interview with AIFC / AIX (Amin Turgulova, Olivier Gueris), 15/08/2017.

10. Trading Instruments and Derivatives

The most important fact concerning trading is that there can be no liquidity where there is no demand. While other factors may limit liquidity as discussed in this paper, it simply cannot exist if there is no demand for the underlying product. Therefore, the old adage: 'build it and they will come', implying that just by providing a derivatives market it will trade, does not apply to markets. The products that attract liquidity are born from a combination of demand for them and ability of the market to service them. Simply, liquidity, if allowed to do so, will materialise where there is demand and will not where there is no demand.

Take the EU ETS as an example. The electricity utilities with exposure to carbon, that make up around 65% of emissions captured by the EU ETS, receive no free allocation and therefore must source their own EUAs for compliance. As part of their hedging and risk management strategies the utilities typically participate in EUA auctions. The auctions operate on a spot settlement basis and therefore require cash settlement in full on the day following the auction date, which is followed by physical EUA delivery. However, the cashflow requirements of spot purchases do not match the typical European utility risk management profiles that involve making power sales (that create the requirement to purchase carbon) up to 3 years in advance. To reconcile the cashflow timing differences, the utility will use 'spread' trades to 'roll' their auction purchases by selling spot and arranging a repurchase at a future date that more closely matches their power sales. That re-purchase at a future date is either a forward or futures trade. Therefore, the demand for derivatives comes from a need to hedge long term and a desire to move cash flows to the same timeframe as the hedges. The market provides this risk management tool because companies can make a profit from servicing the need. In this example, the banks finance the spot purchases with their low cost of capital and provide a benefit to the electricity utilities that would otherwise have to deploy their more expensive capital.

The high levels of liquidity in the forward and futures markets of the EU ETS is almost entirely a consequence of the liberalised and privatised electricity markets in Europe that incentivise long-term risk management as well as constant short and long-term re-optimisation of generation portfolios. Because the Kazakh electricity system is not fully liberalised the KazETS can't necessarily turn to this sector to boost the demand for forward and futures trading. However, there are two exceptions to this rule;

1. The first is created by the annual compliance cycle. Allowances are typically not required until after the end of the calendar year. However, the desire to lock in prices should be managed throughout the year. This results in companies often buying carbon credits that they do not need until the following year. For those companies with a high cost of capital it can make sense to lock in a price in the short term, for risk management purposes, but to only pay for their carbon when they need it, at or near the compliance deadline. In this

way, demand for a futures market can start to form even when market participants only have a desire to hedge spot carbon.

2. The second is created by speculators that want to trade the market short, i.e. profit when prices drop. In a spot-only market this is not possible because being short the physical commodity is not possible. However, it is possible to sell a forward or futures contract that requires delivery at a later date and be able to deliver into that contract by buying spot at some point between the trade date and the future delivery date. While traders may desire the ability to 'short' the market it is important to note that without the demand mentioned in 1. above, short-selling activity is also impossible.

Therefore, in the absence of long-term hedging demand, the derivatives market that will have the most potential in the KazETS is a pre-compliance-deadline future. A sensible timeframe for expiry of a pre-compliance-deadline future would be one month prior to the compliance deadline, i.e. 31st March of the year following the year of emissions²⁶.

In the case of the KazETS it does no harm to specify other, longer-term, futures contracts to be listed on the AIX, because there will be occasional transactions in those products, but it is highly unlikely that they will become liquid.

The existence of a futures contract would bring a few more contributors to liquidity:

1. Leverage. Traders like to bet with minimum capital outlay, futures allow them to leverage their available capital and to trade in larger quantities than if they could only trade in spot alone. Futures makes trading the KazETS more attractive to speculators.
2. Physical delivery in the KazETS may be problematic due to registry account opening issues. A futures contract does not require every trader to take or make physical delivery because they have the opportunity to reverse the trade before the settlement date and therefore have no physical settlement liability. This widens the pool of prospective market participants by removing one of the more fundamental barriers to entry – the requirement for a registry account.

²⁶ A one-month gap provides a safety net should there be any delivery or settlement issues at or just after expiry of the future dated contract.

11. Controlling market manipulation

The primary mechanism for controlling market manipulation is a strong disincentive. The UK's primary regulator, the Financial Conduct Authority (the 'FCA') deals with this problem with the threat of unlimited fines and up to 7 years jail time for perpetrators. To monitor market manipulation the FCA undertakes its own surveillance of financial markets and has systems for identifying insider dealing and market manipulation including analysing transaction reporting data. It also relies on other market participants and exchanges to identify suspicious behaviour.

However, in a market of limited size like the KazETS (a mere 10% of the size of the EU ETS in tonnes and even less in absolute monetary terms), cornering the market by buying up all the spare KazETS allowances is a bigger risk because it is easier to do. At present the only participants in the KazETS are domestic installations but the objective of AIFC is to widen market participation to foreign investors. The presence of more investors increases the possibility of single investors seeking to corner the market. Relying on trade reporting alone may not be sufficient as without a rules-based approach (i.e. how much purchasing equates to an attempt to corner a market) proving the intent may be difficult.

In theory, the simple way to prevent a smaller trading system from being manipulated is to prevent speculation by entities not included in the ETS (e.g. prevent banks and trading houses from participating in trading – as has been done in the South Korean ETS, that incidentally also suffers from poor liquidity). However, in reality the installations covered by an ETS are as capable of manipulating the market as the trading houses. In Europe, for example, the largest speculators are in fact the electricity utilities themselves. Therefore, a ban on banks and trading houses is not a solution and an outright ban on speculation is not possible to police. For example, where does hedging become speculation?

In a large ETS like the EU's it is difficult to buy a large share of allowances and 'corner' the market because it would be very expensive to do so. There are also very strong laws to prevent a company manipulating a market that act as a powerful disincentive. With the KazETS at 10% of the size of the EU ETS, and with allowances trading at lower prices it is theoretically easier to buy a relatively large number of them. It is therefore appropriate to consider a volumetric limit on positions held by companies that are in excess of their normal hedging needs. Even though the KazETS is small relative to the EU ETS the position limits could still be sizeable, for example if they were set at 1Mt per speculator that would be a decent sized risk for the trader but nowhere near enough to influence the 160Mt Kazakh emissions trading system. It is also unlikely that more than a handful of speculators would all want to own KazETS allowances all at the same time so even a coordinated effort – which would be illegal – would struggle to influence the price. Setting the level of the speculative limit (to avoid market manipulation) goes beyond the remit of this paper but it is a relatively straightforward process to come up with a guideline number.

One of the suggestions to increase the chances of liquidity developing in the KazETS is to allow OTC trading in the AIFC. The main concern about OTC trading is that regulatory authorities have no visibility of trades and therefore cannot determine if a market is being manipulated. The straightforward solution to this problem is to oblige the reporting of OTC transactions to either an exchange (as occurs in some of the Chinese regional ETSs) or to the financial regulator. Trade reporting adds a small additional administrative burden, but it is a reasonable compromise in order to gain the flexibility of OTC trading.

12. Comparing International Carbon Exchanges

There are emissions trading schemes in Europe, the US, Canada, China, South Korea and New Zealand. In most of these jurisdictions there are one or more carbon exchanges. Both Chinese and South Korean carbon exchanges only allow spot carbon trading, so they are of limited comparative value because Kazakhstan already has its own spot carbon exchange and wants to go further. Of the rest, the US and European ETSs have fostered the most diverse product offerings. The main exchanges serving this market are compared in the table below.

Table 2: Comparison of the features of the most liquid carbon exchanges

Exchange name	Intercontinental Exchange (ICE) Europe	European Energy Exchange (EEX)	ICE North America
ETS served	EU ETS	EU ETS	California ETS, RGGI
Location	London	Leipzig	Chicago
Regulatory authority	Financial Conduct Authority	Saxon State Ministry of Economic Affairs, Labour and Transport	Commodity Futures Trading Commission
Legal system	Common Law (England & Wales)	Civil law, in German	Common law & some civil law

Exchange name	Intercontinental Exchange (ICE) Europe	European Energy Exchange (EEX)	ICE North America
Carbon products traded	EUA/CER/EUAA: Auctions 'Spot' Futures Options Spreads (time & product) OTC trade registration	EUA/CER/EUAA: Auctions Spot Futures Options Spreads (time & product) OTC trade registration	CCA/RGGI: 'Spot' Futures Options Spreads
Allows carbon credits for margining?	No	Yes	No
Typical cost to access exchange²⁷	\$30,000 minimum spend with clearing member	\$30,000 minimum spend with clearing member	\$30,000 minimum spend with clearing member
Combined exchange and clearing fees	€0.04 (various rebates can apply) per tonne	€0.03 (various rebates can apply) per tonne	CCAs \$0.05 RGGI \$0.0175 per tonne
OTC give-ups	Yes	Yes	Yes
Minimum contract size	1 lot (=1,000 tonnes)	1 lot (=1,000 tonnes)	1 lot (=1,000 tonnes)
Settlement price	Weighted average of trades in the last 10 minutes of trading day	Weighted average of trades in the last 10 minutes of trading day	Weighted average of trades in the last 10 minutes of trading day
Physical or financial settlement	Physical	Physical	Physical
Restrictions on company entry to trade	Minimum experience and asset requirements set by local regulator	Minimum experience and asset requirements set by local regulator AND a special EEX exam.	Minimum experience and asset requirements set by local regulator

As can be seen from the table the transaction and membership costs are similar across the platforms and emissions trading schemes. Based on the typical access costs it is not cost-effective for individual installations, sometimes only needing to buy a few thousand carbon credits a year, to have direct access to exchanges. This makes OTC trading far preferable for smaller transactions. Broker-dealers typically pay to access the exchange directly and then work as intermediaries to the wholesale markets on behalf of the companies with small carbon requirements.

²⁷ Membership of each exchange varies but for carbon only it is typically \$2-3k per year. However, to be able to clear on the exchange a company has to be a clearing member or be a customer of another clearing member. In order to provide access to third parties those members typically have minimum clearing business thresholds.

The advantages of partnering with an existing exchange are: access to know-how, credibility by association, access to the exchange's existing client base, access to an exchange's existing European and US products and access to their existing product range and infrastructure.

The disadvantages of partnering with another exchange are: giving away a proportion of trading revenue and potential incompatibility of legal frameworks. In the case of EEX, they do not have a US product offering. In the case of ICE, they have a dominant presence in carbon markets and so are less pro-active when it comes to developing new markets.

Of the exchanges mentioned, the EEX seems to be the most pro-active when it comes to trying to create new product for emerging carbon markets. Their efforts to create a market in offsets that can be used in the Chinese National Emissions Trading Scheme (CNETS)²⁸ is a stand-out example.

²⁸ <https://carbon-pulse.com/17162/>

13. Setting up an AIFC Carbon Exchange

Listing another product on an exchange is in itself a fairly straightforward process, however there are some aspects that are specific to emissions trading that need to be considered. To ensure all aspects are covered, the considerations that an exchange operator must make in relation to KazETS trading on exchange are detailed below;

Registry and physical delivery

Commodity exchanges can handle physical delivery in different ways however the delivery of carbon credits (Kazakh Allowances in this case) is probably the easiest commodity of all because delivery entails movement of electronic 'certificates' in a central registry. Therefore, to effect delivery, the exchange must own or have access to a registry account in the KazETS. When a contract expires, every net seller must deliver their carbon credits by a set time so that they can be on-delivered to the buyers. In case the delivery is not made in time, for whatever reason *except* a registry outage, there needs to be a back-up physical deliverer in place, i.e. someone who will step in for the defaulting party and deliver carbon credits for a fee. Given some of the potential difficulties involved with setting up a Kazakh ETS registry account for some types of market participants (e.g. foreign companies), it may be advisable to offer a cash-settled alternative to physical delivery to participants (similar to the benchmark Brent Crude product), however to be effective this will require an index (Settlement Price) that accurately reflects the prevailing price of Kaz Allowances.

Registry outage

Given that the registry is the only place where the carbon credits 'exist', the registry is the cornerstone of the system. If the common ETS registry is out of action, then delivery cannot take place and there needs to be a plan to get around the issue. An outage could give rise to force majeure, or the contract could revert to a financial settlement and not a physical one, however this would not satisfy the physical requirements of those buying carbon credits for compliance. A sensible solution is to delay delivery for a rolling set period, for example a few days or a week to give the registry operator the opportunity to bring the registry back online. If the registry is still not online then the delivery delay can be repeated a set number of times before an alternative settlement procedure, for example a cash-out of the trade, is enforced.

Contract definition

The definition of the exchange-traded contract is crucial to its success. In the case of emissions trading the contract should be physically delivered, should have a certain minimum size (1,000 tonnes is common), should have an expiry date, delivery window, delivery method, delivery back-up plan, currency, minimum 'tick' size (how much the bid or offer price can be varied, in Europe it is €0.01), where the product is listed, trading window (hours of trading), Settlement Price (for

calculation of margin, see below), taxation requirements, Settlement Price calculation methodology and margining methods.

Regulatory classification of Kaz Allowances

Kaz Allowances are legally defined under the Kazakhstan ETS law as commodities. As such, the exchange that ultimately lists them must be permitted to trade commodities. In the case of AIX, while there are plans to list commodities this is not their priority and it may be as long as 2 years before they do so. A proposed alternative approach is to re-define Kaz Allowances as financial certificates by using AIFC's rule-making capabilities²⁹. By re-classifying as a financial instrument care must be taken to not preclude the participation of the lifeblood of any ETS, the installations with compliance obligations. One way to do this is to generally exempt compliance installations from the regulations governing the trading of this particular financial instrument. This is how the EU will overcome the problem in the EU ETS when MIFID II comes into force. Note 1: intermediaries providing a service to end-user installations that do not want the expense or administrative burden of exchange membership must be similarly exempted. Note 2: re-definition as a financial instrument in AIFC may lead to conflict with domestic Kazakh law if Kazakh companies are also to be admitted to KazETS trading in AIFC. Note 3: It may be easier to make an exception in AIX's commodity dealing plans in order to allow Kaz Allowance trading.

Trading platform technology

Delivery of carbon credits is little different from delivery of share certificates in an equities market. Share certificates are expected to be delivered electronically in AIFC³⁰ so other than the location or type of 'registry' that must be interfaced with, equities and carbon certificates have a lot in common.

Market supervision

To avoid market manipulation, as previously discussed, specific guidelines for the exchange's market supervision team will need to be formulated.

Promotion of the contract and platform

If there is only one platform to buy and sell KazETS allowances, then it is tempting to believe that contract and platform promotion is less important. However, most companies in the KazETS will take time to get themselves in a position to trade, will be naturally reluctant to make the effort much before the compliance deadline and foreign companies and speculators will not necessarily be naturally inclined to get involved. Therefore, promotion of the virtues of the AIFC listing Kaz Allowances is key to rapid uptake and development of liquidity. Companies will need to hear of the simplicity of signing-up, of access to the platform and of delivery, and they must be sold on the benefits of trading within AIFC versus any competition.

²⁹ Telephone interview with AIFC / AIX (Amin Turgulova, Olivier Guerin), 15/08/2017.

³⁰ Telephone interview with AIFC / AIX (Amin Turgulova, Olivier Guerin), 15/08/2017.

Market maker

Liquidity may be enhanced by employing the services of a market-maker. There are various market-making models that can be used. In the early stages of AIFC's activity, a paid market-maker may need to be considered.

Restricting trading hours to maximise liquidity

The ICE and EEX currently open for business every week day (that is not a national holiday) between the hours of 7am and 5pm GMT. This is a very long trading window and is presumably designed to allow all-comers, except for the very Far East, the opportunity to trade EU ETS carbon emissions for at least some hours of the working day. However, in the case of the Kazakh ETS, while liquidity develops over time, a very limited trading window will maximise the available liquidity and increase the validity of the Settlement Price (see below). For example, the market could open for 1 hour per day or even 2 hours per week at the start, with a view to expanding trading hours over time to meet demand. While restricted hours are not ideal for market participants, a lot of things can happen in a week that could materially affect the price, this approach reduces the cost of running the exchange and it focuses the attention of market participants.

Settlement Price

The settlement price allows market participants to know where the market is pricing carbon on any given day and can be used as a benchmark for swaps and for pricing items, such as electricity. However, its greatest significance to AIX is that it is used to settle margin requirements on futures trades, i.e. the change in value of the open interest of the contracts traded. See below for more details on margining requirements. The Settlement Price is usually calculated from the weighted average of trades in a given time period. In ICE's case they have two prices, the weighted average of trades throughout the day and the weighted average of trades in the last 10 minutes of the trading day. The latter is arguably a better reflection of the real price of carbon and is therefore used for margining requirements. In the case of Kaz Allowance trading the liquidity is not there to support the same model, therefore a weighted average of all trades executed on the trading day is likely to be more useful. There must be a minimum trading volume requirement for the index to be set – to avoid Settlement Price manipulation – so the exchange must have a mechanism in place to allow it to publish a Settlement Price in the absence of suitable traded volume. Typically, the exchanges roll the previous day's Settlement Price in such circumstances, but broker quotes can be used as an alternative.

Margining

There are two types of margin required by exchanges, Initial Margin (IM) and Variation Margin (VM). IM is effectively a deposit that should cover expected volatility between trading periods plus some margin for error. VM is the change in value of the Settlement Price between trading periods. Both are multiplied by the open interest (net traded volume) of each market participant to arrive at a value that must be posted to (or by) the exchange. There is nothing special about carbon trading that makes margining different to any other exchange-listed product. However, due regard

must be taken when setting the IM level while the KazETS is illiquid, particularly because it has exhibited extreme volatility (low price of 30 Tenge and high of 1,650 Tenge).

14. Conclusion

This paper has put forward a number of suggestions for how a carbon exchange based in the AIFC could help improve the liquidity of the KazETS-traded market as well as some suggestions for emissions trading law changes that would dramatically improve the fortunes of the system. The actions that are most highly recommended are as follows;

- Direct AIFC actions;
 - a Allow OTC trading of KazETS allowances in AIFC in order to foster the demand for exchange trading, with mandatory reporting of trades to the exchange. OTC trading is scheduled to be allowed from January 2018.
 - b Consider appropriate position limits for speculative activity to avoid the risk market manipulation
 - c While the KazETS develops into a more vibrant market list EUAs in AIFC to give both local and international companies the opportunity to gain experience in emissions trading.
 - d Make anonymised trade data available to the public (including OTC activity)
 - e Consider consolidating Kazakh commodities trading on one effective platform to maximise participation in KazETS trading both nationally and internationally.

- In addition to the PMR and PETER recommendations, support and encourage KazETS law and regulation changes in time for the 2020 National Allocation Plan as follows;
 - a Allow limited use of imported offsets for compliance with the KazETS
 - b Allow use of EUAs or CNETS allowances for compliance with the KazETS
 - c Allow the sale of KazETS allowances without proof of energy efficiency gains. This is scheduled to be allowed from January 2018.
 - d Long-term: remove free allocation to Kazakh power generators and hold open auctions instead

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