Executive Summary

The green bond market reached several significant milestones in the third quarter of 2017. September set a record with USD 16.4 bn of issuance, and the market rushed past last year’s total of USD 97 bn, before crossing the symbolic USD 100 bn mark, and rising to USD 110 bn by the second week of October. September issuance was strikingly higher (131%) than 2016 Year-over-Year (YoY), boosting 3Q17 issuance by 36% YoY. A healthy pipeline of announced deals remained for October or later.

As described in the previous edition published in August, market activity appeared calmer in July due to a smoothing out of the very serrated Chinese issuance patterns that characterized 2016, but Chinese activity was already approaching 90% of 2016 levels at the time of this writing.

Total cumulative green bond issuance had already broken the USD 300 bn mark in August, and stood at USD 338 bn by the second week of October, with the total number of individual green bond issuers surpassing the 500 level.

The market continues its trend of geographic and sectoral diversification, with 38 jurisdictions featuring green bond issuance in 2017. Three regions account for over half of issuance, with the U.S. retaining its top spot in the ranking (USD 25.4 bn of issuance). Uniquely among other regions, the American green bond market in 2017 is dominated by green securitizations and municipal bonds, which account for 81% of issuance. China (USD 19 bn) swapped ranking places with France during September (USD 17 bn). Mexico had been absent from the market in 2017 but returned dramatically, with USD 4 bn of new green bonds issued by the Mexico City Airport Trust.

Drivers of this activity and geographic dispersion can be attributed to elevated green infrastructure investment demand underpinned by an increasingly broad complement and confluence of enablers, alongside increasing appetite from institutional investors. The last edition discussed the future of mobility – and its electrification – which continued to represent a vivid case study in how these factors are converging as China followed the U.K., France and others with ambitions to phase-out the internal combustion engine. We welcome analysis from SEB’s Arvid Böhm on these issues as they relate to the Nordics, as well as from SEB’s Kristoffer Nielsen on Norway as a case study.

SEB maintains its 2017 year-end green bond market potential issuance figures at USD 125 bn in a baseline scenario, with upside potential for issuance to rise to USD 150 bn. SEB’s scenario analysis for the green bond market is revised with forward projection ranges of USD 135-159 bn of issuance in 2017. Securitizations (ABS & MBS) have surged by 222% YoY, to USD 15 bn, most importantly from U.S.-based issuer Fannie Mae. Issuance from government agencies jumped 127% YoY to USD 12.4 bn. Sub-sovereign issuance including from municipalities and regions rose since Q2, now up 23% YoY. New analysis on the emerging market universe of opportunities is provided.

On the whole, the corporate green bond sector has been a beehive of activity, up 36% YoY to USD 50 bn, driven by a 131% rise in corporate non-financial issuance, standing at USD 32.6 bn. The corporate financial sector, fell off by -24% at the close of 3Q to USD 17 bn. However, financials rushed into 4Q with renewed vim and vigor on the back of the Industrial and Commercial Bank of China (ICBC) inaugural ‘One Belt One Road (OBOR) Green Climate Bond’.

Climate & Sustainable Finance Review

Guest contributors welcomed in this issue:

- **Asian Development Bank**: A Concept for Leveraging Blended Finance for Green Development;
- **Kommunalbanken Norway**: KBN’s green bonds and the Norwegian green bond market;
- **Nordic Public Sector Issuers**: To launch joint position paper on impact reporting.
Letter to the Reader: PRICING THE UNKNOWN, or unrelated – has never been in the mind of financial professionals - and may be unlikely to get there

When evaluating this statement from a sustainability angle, this means that what today is perceived to be an externality in the credit approach needs to be internalized (as expressed often by my good friend Stuart Kinnersley) – the question is how.

In connection with the EU High Level Expert Group on Sustainable Finance (where we were privileged to be invited as a reviewing panellist when the interim report was released in Brussels), we have had endless discussions around these topics inside my team. Considering that the core of finance is about pricing risk and opportunities for certain assets – we ended up with 3 observations around these issues.

1) The need to identify externalities which may be perceived as being non-relevant for a traditional credit assessment but should be a natural part – and internalize them.
   - This requires awareness, engagement and analysis, hence, the expected benefit needs to exceed the expected extra cost of due diligence.

2) Forcing known externalities to be recognised in traditional credit assessments – this can be done, for example, through regulations and procurement processes.
   - This requires that you define and agree (!) on what you want to move – which is linked to the major debate around taxonomies and standards.

3) Changing behaviour.
   - This means that financial professionals either make a subjective assessment on the relevance of certain sustainability factors for the ability of an asset to perform (as they do on governance) or that the perception of high performance goes beyond exclusively short term profit.

Assessing this – and looking back on my 29 years in finance – two reflections come to my mind. The first one is that there are few areas as competitive as financial markets. Individuals – and individual institutions – compete and want to be recognised as high performers, which mostly has been rewarded by monetary means. If we want to change behaviour we need to establish systems which allow these competitive individuals to “win their gold-medal” in different ways. One model – even on individual terms – is to start looking into net present value terms, rather than cash here and now. This is exactly what internalizing externalities is about. This is also, for example, what we try to do with career planning and education – but do our cultures manage to get the young performers to realize the current benefits of these efforts?

But the second reflection is more fun. Looking back - all top performers I have met have had a tendency to think out of the box. They tend to look to the future and identify areas which were about to be internalized – or – had been internalized incorrectly. I have never seen a topic with more potential for identifying externalities which will be internalized. Regulators want to act, investors are already moving, and industries are in transition. Scientists and re-insurers are ringing the bell to raise awareness over increased biophysical, ecosystem and financial risks. And of course, we need to invest USD 90 trillion over the next 35 years in sustainable infrastructure to deal with resource considerations, climate stress, pollution impacts, waste management challenges – just to handle urbanization in a sustainable (i.e. stable) manner.

So if somebody missed what I am trying to say – this here is a lifetime opportunity!

Enjoy your reading,

Christopher Flensborg
Head of Climate & Sustainable Financial Solutions, SEB
1. Green Bond Market 2017 Market Development and Outlook

The green bond market reached several significant milestones in the third quarter of 2017. September set a record with USD 16.4 billion of issuance, and the market rushed past last year’s total of USD 97 billion, before crossing the symbolic USD 100 billion mark, and rising to USD 110 billion by the second week of October. September issuance was a staggering 131% higher than 2016 Year-over-Year (YoY), boosting 3Q17 issuance by 36% YoY. A healthy pipeline of announced deals remained for October or later (see Section 3).

Total cumulative green bond issuance had already broken the USD 300 billion mark in August, and stood at USD 338 billion by the second week of October, with the total number of individual green bond issuers surpassing 500 (Figure 2).

As described in the previous edition, market activity appeared calmer in July with overall issuance falling by -28% YoY due to a smoothing out of the very serrated Chinese issuance patterns that characterized 2016 (as illustrated in Figure 4), but Chinese activity was already approaching 90% of 2016 levels at the time of this writing.

As depicted in Figure 3, three regions account for over half (56%) of issuance, with the United States retaining its top spot in the ranking (USD 25.4 billion of issuance), followed by China (USD 19 billion), which swapped places with France during September (USD 17 billion). Supranational institutions such as Multilateral and Regional Development Banks hold their fourth place ranking (USD 8 billion), with Germany approaching (USD 6.7 billion) to round out the top five. Mexico had been absent from the market in 2017 but returned dramatically, with USD 4 billion of new green bonds issued by the Mexico City Airport Trust, placing the country in sixth place.

The next group of regions is grouped together ‘neck-in-neck’ with between USD 2.8-3.3 billion of issuance over the period. Activity in India picked up after the Securities and Exchange Board (SEBI) released its final green bond guidelines in June. Spain was a new entrant to the top 10 over the summer, joining stalwarts Sweden and the Netherlands.

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1 Breaking the previous monthly issuance record of USD 15.8 billion in November 2016
2 Bloomberg/BNEF methodologies (see Guide to Green Bonds on the Bloomberg Terminal) used to qualify green bonds. Note that Bloomberg is actively “tagging” different types of bonds as green (e.g. Corporate-level ‘use of proceeds’ and ‘pure-play’ as well as ‘asset level’) on the Terminal. Methodologies to better distinguish these bonds are also being developed and will be included in due course.
3 U.S. municipal entities account for the largest increase by category of issuer in 2017.
As shown in Figure 5, the market continues its trend of geographic and sectoral diversification, with 38 jurisdictions featuring green bond issuance in 2017. Drivers of this activity and geographic dispersion can be attributed to heightened green infrastructure investment demand (and green bond financing) that is underpinned by an increasingly broad complement and confluence of enablers including economic, technological, security, policy, social and green bond-specific forces, alongside increasing appetite from institutional investors.

The last edition discussed the future of mobility – and its electrification – which continued to represent a vivid case study in how these drivers and factors are converging. As China followed the U.K., France and a growing list of other countries with ambitions to phase out the sale of gas and diesel powered vehicles, in favor of electric (over vastly differing time periods), we welcome in Chapter 7 a focus piece from Arvid Böhm on these issues as they relate to the Nordics. In September, Beijing called for one out of every five cars sold in China to run on alternative fuel by 2025 and issued new rules that would require the world’s carmakers to sell more alternative-energy cars in China should they wish to continue selling regular ones. A Chinese official recently said the country would eventually do away with the internal combustion engine in new cars. Norway, a country which is setting the pace on EV deployment in Europe, is the focus of two guest contributions in the edition: by KBN in Chapter 5, and by SEB’s Kristoffer Nielsen in Section 6.
The American green bond market, which was the focus of our previous report, continues to expand. Uniquely among other regions, activity in 2017 is dominated by green securitizations and municipal bonds, which account for 81% of issuance. Close to 55% of U.S. issuance (USD 14 billion) comes in the form of green Asset Backed and Mortgage Backed Securities, led by Fannie Mae (the Federal National Mortgage Association) which printed USD 11.8 billion of green MBS through to June 2017. A further 26% (USD 6.6 billion) is in the form of green muni bonds issued by 34 individual municipal entities.

This year, 76% of green bond issuance has occurred in OECD markets (USD 76 billion) and from supranational institutions (USD 8 billion). As shown in Figure 6, in the OECD, issuance is relatively evenly distributed across types of green bonds and sectors. Issuance out of Emerging Markets and Developing Economies (EMDEs) continues its increasingly important growth trend. The shift in the overall composition of the market since the beginning of the year is noticeable with 24% now coming from EMDEs, leading to a larger universe of EM opportunities becoming available. As depicted by Figure 7, the sectoral distribution in EMDEs looks completely different, and is heavily weighted towards corporate bonds (split fairly evenly between financials and non-financial corporates).

**Figure 6. USD 76 bn issued in OECD markets in 2017**

**Figure 7. USD 26 bn issued in EMDE in 2017**

SEB maintains its 2017 year-end green bond market potential issuance figures: USD 125 - 150 billion

SEB maintains its 2017 year-end green bond market potential\(^5\) issuance figures, unchanged since the beginning of the year, at USD 125 billion in a baseline scenario, with upside potential for issuance to rise to USD 150 billion. This range was constructed “bottom up” through a sector-by-sector analysis described in edition 1Q/1 that examines the potential for issuance across geographies and within the categories of Sovereign, Supranational, Agency, Municipal (and sub-sovereign), Corporate, Securitizations, and Project Bonds.

Other than securitizations, issuance in most of these sectors (visualized in Figure 8), appears to be in line with SEB’s views on their potential for 2017, and this activity is explored in this following section.

The emergence of the green sovereign market, which was described in previous editions, appeared to be on track in terms of quantum of issuance; however the much-awaited entrance of countries other than Poland and France had yet to materialize.

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\(^5\) As previously stated, SEB’s analysis estimates the “potential for issuance” using a variety of assumptions and scenarios (both bottom up and top down) in a quest to better understand the temporal characteristics of this youthful market. On a somewhat related note, for enthusiasts and critics of energy and transport forecasting, these recent pieces by Michael Liebreich (A) and (B) are very insightful.
Green Securitizations have the potential to see USD 20 billion of issuance in 2017

Securitizations (Asset Backed Securities and Mortgage Backed Securities) have surged by 222% YoY, with USD 15 billion of issuance, most importantly from US-based issuers (as described above) but also out of China and Australia.

Issuance from government agencies jumped 127% YoY to USD 12.4 billion, with new large transactions from KfW adding to other national public financial institutions or development banks earlier in the year. Korea Development Bank and Korea Export Import Bank also came to market in 3Q. Kommunalbanken Norway, recently elected to the GBP Executive Committee, provides a focus piece in Chapter 5.

Municipals and Regions growing

Sub-sovereign issuance including from municipalities and regions rose since Q2, now up 23% YoY to USD 8 billion with the U.S. featuring prominently (as discussed above) as well as South Africa (City of Cape Town) and Argentina (Province of Jujuy).

Non-financials drive an expanding and diversifying corporate bond market

On the whole, the corporate green bond sector has been a beehive of activity, up 36% YoY to USD 50 billion, driven by a 131% rise in corporate non-financial issuance, standing at USD 32.6 billion. This rise can largely be attributed to large-scale participation by the European electric/utility sector (with sizable September transactions from SSE, Iberdrola and Engie) but also with diversifying participation from technology, engineering, water, medical/healthcare and forestry, pulp and paper sectors.
Asia-Pacific and Europe drive financial sector issuance by banks and real estate financiers

The corporate financial sector (including real estate), had lagged 2016 issuance earlier in the year caught up briefly over the summer, but fell off by -24% at the close of 3Q to USD 17 billion. However, financings rushed into 4Q with renewed vim and vigor on the back of the Industrial and Commercial Bank of China (ICBC) inaugural ‘One Belt One Road (OBOR) Green Climate Bond’, which SEB was honored to be part of. The world’s largest bank priced a triple tranche twin currency EUR/USD deal valued at USD 2.1 billion. The lion’s share of the FRN tranches taken by European investors and in the fixed USD 5 year tranche, the opposite was the case, with Asian investors taking 84% of the issue.

Over USD 3.8 billion had already been issued by financials in the first 10 days of October (which is 135% over the full month of October 2016), including twin EUR 500 million green bonds out of Japan from Mizuho and Sumitomo Mitsui Financial Group. In Sweden SBAB Bank returned to market with a dual tranche SEK 1.75 billion green bond. This is SBAB’s second green bond transaction; following their inaugural SEK 2 billion trade in June 2016 (SEB was honoured to have acted as joint bookrunner on both).

Supranational institution (Multilateral and Regional Development Banks) activity had been up and down throughout the year and ended 3Q up by 4%, with new transactions in multiple currencies in 3Q from ADB, EBRD, EIB, IBRD, IFC and NIB. A focus piece from ADB on catalyzing green finance is welcomed in this edition in Chapter 4.

Figure 11. Issuance evolution by sector 2010-2017

2. Green bonds: Market trajectory for 2017

From a “hawkish” perspective, if the market were to follow a trajectory based on month-to-month cumulative issuance market growth observed in 2016 for the rest of this year, this extrapolation would project forward to USD 153 billion (Figure 13, Scenario A). Using a different methodology of historical percentage change in issuance volume (as observed on a month-to-month basis) would result in even higher levels of USD 159 billion.

Issuance continues to appear to be following a trajectory that is more statistically similar to the former methodology on a percentage change basis, however on an absolute numerical basis, issuance in September was so far above 2016 levels (131%) that due care must be given to this month being anomalous. This is especially the case given the unusual magnitude of some individual September bonds e.g. the USD 4 billion Mexico City Airport bonds out of Japan from Mizuho and Sumitomo Mitsui Financial Group.

As shown in Figure 16, we have recently introduced analysis of moving Last Twelve Months (LTM) of green bond issuance. These metrics show that cumulative LTM figures surpassed USD 100 billion in January 2017, grew relatively steadily to reach USD 129 billion in June, and then fell in July for the first time since September 2015 to USD 125 billion, before recovering strongly to reach USD 138 billion at the end of September. A 2-month moving average of percentage change in LTM shows a downward trend for most of 2017 that was suddenly reversed in September.

Figure 12. Sector shares, issuance 2010-2017

Source: SEB analysis based on Bloomberg/BNEF and SEB data. YTD through October 10.

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Velocity of issuance scenario modeling suggests hawkish forward projection range of USD 153-159 billion of issuance in 2017

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As such, revisions are made to model a more "dovish" scenario. Scenario B (red line in Figure 13) assumes that September 2017 issuance was an anomaly, and overlays September 2016 values on Scenario B. A further adjustment is made to control for a “Low China Scenario”, given that the majority of Chinese issuance occurred in the second half of 2016 (see Figure 9, green dotted line), and Chinese issuance at the time of this writing had been down by -30% on average throughout the year.

Under this scenario, the market would still grow through a traditionally busy 4Q and project forward to USD 135 billion (still USD 10 billion over SEB’s bottom up base case construct formulated in January 2017). As can be seen in Figure 13, issuance of USD 110 billion by 10 October appeared to be more consistent with this Dovish Scenario B, and also in line with LTM figures of USD 138 billion for September.

As shown in Figure 17, there are healthy signs for the Chinese market too, which has been characterized by smaller but more numerous and diverse issues. LTM figures have held up most of the year in the USD 30 billion range before falling to USD 27.2 billion in August and recovering to USD 29 billion by the beginning of October. LTM figures for number of individual bonds issued out of China had been steadily increasing all year and this trend looks set to continue through October. The pipeline of announced Chinese deals also continued to appear solid, complementing signaling from Chinese authorities that green bond issuance in 2017 potential is “strong” and efforts being developed to attract foreign investment into the domestic green bond market, while providing domestic policy incentives.

A dovish scenario is revised upwards to USD 135 billion of issuance in 2017 based on stronger Chinese participation and overall market diversification, but adjusted for unusually strong September activity.
3. Green Bond Announced Pipeline

- Innogy EUR
- Rikshem SEK
- LA MTA USD
- San Diego School District USD
- Indiana Finance Authority USD
- Metropolitan Government of Nashville and Davidson County, TN USD
- New Development Bank green panda
- State Bank of India USD 3 billion
- IREDA green masala
- Mexico City MXN
- Iren EUR Benchmark
4. Catalyzing Green Finance: A Concept for Leveraging Blended Finance for Green Development

The Asian Development Bank (ADB) has recently launched a new report on green finance, which proposes the creation of national or regional green financing vehicles to catalyze environmentally and financially sustainable infrastructure investments in Asia and the Pacific.

The report, titled Catalyzing Green Finance: A Concept for Leveraging Blended Finance for Green Development, highlights the constraints for developing a large pipeline of bankable green infrastructure projects and calls for an integrated approach to transforming country financial systems.

ADB, based in Manila, is dedicated to reducing poverty in Asia and the Pacific through inclusive economic growth, environmentally sustainable growth, and regional integration. Established in 1966, ADB is celebrating 50 years of development partnership in the region. It is owned by 67 members—48 from the region. In 2016, ADB assistance totaled $31.7 billion, including $14 billion in cofinancing.

The Green Financing Decision

The report outlines the concept of a Green Finance Catalyzing Facility (GFCF), which would serve as a model for countries to create their own financing vehicles and implementing mechanisms.

Such a Facility primarily aims to leverage public funds and policies to catalyze a blend of financing from private sources for increasing green infrastructure investments. Mobilizing additional funds from the capital markets is a major objective of these vehicles. Public funds would be used as risk mitigators to create bankable projects and crowd in private funds, technology, and efficiency improvements.

GFCF’s nature as a facility, rather than a fund, would enable a holistic approach to green finance, through raising private funds not just at project levels but also at a portfolio or pool-of-projects level, which diversified risk structure would enable funds flows from especially institutional funds and investors.

"A paradigm shift in infrastructure planning and design is an imperative for dynamically changing Asia. The choice that Asia makes in bridging infrastructure gaps will have profound implications for its people and the planet," per Bambang Susantono, ADB Vice-President for Knowledge Management and Sustainable Development. "The publication is timely in providing practical institutional solutions for enhancing countries’ financial systems to help them chart a greener, more sustainable future."

The report directly responds to ADB member countries’ needs to address the persisting shortfalls in infrastructure investments, estimated at over $1.7 trillion annually until 2030, taking into account climate change mitigation and adaptation costs. The proposed national green financing vehicles would help meet these needs while ensuring the best use and conservation of scarce natural resources.
Green finance covers a much bigger scope than climate finance and includes all financing instruments and investment decisions that are geared towards low-carbon, sustainable, and inclusive development. The private sector, regarded as a critical contributor to meeting the region’s development financing needs, would have to contribute over 50% of required green investments in many countries. In the People’s Republic of China (PRC), this contribution is estimated at 90%.

The report is targeted at government and private sector professionals and informs country-specific structures that can assist in strengthening green growth initiatives, while allowing countries to reduce their national-level fiscal burden.

The catalyzing green finance concept emerged late last year during ADB meetings with key government officials, various G20 green finance task force members including from the PRC and the United Nations Environment Programme, and experts from the private sector. ADB worked with several of these experts to develop the report. Queries may be directed at the lead author for the report, Anouj Mehta, based in ADB headquarters in Manila.
5. Kommunalbanken’s green bonds and the Norwegian green bond market

The Norwegian local government funding agency Kommunalbanken (KBN) has issued more than half of the USD 2.9 billion worth of labelled green bonds by Norwegian entities. In this focus piece, KBN’s green finance team shares its thoughts on the future of green bonds – and their own role in it.

When KBN first entered the green finance market in 2010, it was through demand from the Japanese market. This was not a major source of funding to KBN – 14 green transactions totalled 300 million dollars of proceeds – but a useful exercise nonetheless, as it prepared KBN for public green bond issuances. In 2013, KBN offered a 3-year 500 million dollar green bond. This was the first public green bond issuance in the Nordic countries.

Since 2013, KBN has issued another two USD 500 million green bonds, which makes KBN by far the largest single green bond issuer in Norway. These bonds finance what we call Green Loans to Norwegian municipalities, cities and regions: discounted loans granted to investments that contribute to fulfilling our national climate commitments. The Green Loans scheme furthermore targets climate change adaptation measures, as we see an increasing need also to boost resilience towards extreme weather events also in Norwegian communities. KBN’s Green Loans have financed a range of projects from tsunami warning systems on our West coast, to impressive massive wood architecture in the larger cities. As a local government debt aggregator, we also aggregate investments needed in order to carry out the low-carbon transformation in Norwegian communities.

Soon celebrating five years in the public green bond market, KBN is always looking for new ways to develop the market and our role in it. This year, our CFO Sigbjørn Birkeland was elected into the Green Bond Principles Executive Committee. In a few days, we will be launching a practical guide to green bond impact reporting together with eight other Nordic green bond issuers in the public sector. We see considerable benefits of harmonising reporting practices, both to us issuers and to the investors who receive the reports.

KBN Green Loans Portfolio 2017

![KBN Green Loans Portfolio 2017](image)

Even though green finance is high up on the internal agenda of KBN, it does not appear to have kicked off in the general Norwegian market in the same way as it has, for instance, in Sweden. We recently undertook a review of labelled green bonds issued by Norwegian entities, concluding that green bonds worth a total of 2.9 billion USD have been issued since 2010. In other words, the landscape of Norwegian green bond issuers is still relatively small. Total green bond issuance in Sweden has surpassed USD 10 billion, according to Bloomberg.

A breakdown of Norwegian green bond issuances shows that the public segment, comprising KBN’s three green bonds of USD 500 million alongside a NOK 1.5 billion (USD 187.5 million) bond issued by Oslo municipality, makes up 62 percent of the total amount issued. The energy segment, encompassing hydropower, wind, and solar companies is the second largest segment at 24 percent. Real estate entered the Norwegian green bond
landscape in 2016 when partly state-owned Entra ASA launched a 7-year NOK 1 billion (USD 125 million) bond; a deal the company then duplicated in 2017. Although real estate currently contribute only 9 percent of total green bond issuance in Norway, we expect this segment to grow. First out is likely to be the housing association OBOS, which has informed they will offer a green bond later this autumn.

One may ask why Norway, which has gained a ‘green’ reputation for its successful electric vehicle policies and demanding building codes, has not accommodated more green bond issuances. One reason is that domestic industries are still skewed towards oil-related activities. Another reason may be the baseline methodology commonly applied in impact assessments. For an issuer operating in a market with clean electricity and an already quite energy efficient stock of buildings, the quantifiable positive impacts of a project may be negligible compared to that of projects in other economies. Finally, the snowball effect from significant issuers entering the market should not be underestimated. It is our hope that the curiosity toward green bonds we have observed in Norwegian issuers and investors in recent months translates into green issuances, so that the snowball may pick up some speed.

(An exchange rate of 1 USD to 8 NOK is applied in this article.)

6. Case Study: Norway, the Paris Climate Agreement, and Electric Vehicles

A recent debate in Norway has concerned the path that will be taken to reach the Nationally Determined Contributions (NDCs) submitted to the Paris Climate Agreement.

The Norwegian climate targets are:
- Reduce GHG emissions by at least 40% by 2030 from 1990 level.
- Reduce GHG emissions by at least 80-95% by 2050 from 1990 level and transition to a low-carbon economy.

Norway’s GHG emissions have, however, increased slightly since 1990 and as a result Norway had to buy carbon credits to meet the Kyoto Protocol targets in 2013. (climateactiontracker.org). This trend is set to continue as it is expected that Norway will purchase emission allowances under the European Union Emission Trading System (EU ETS) to reach their NDCs for 2030 and 2050. This will effectively finance the transition to a more sustainable economy in other countries and has led to criticism from environmental and political institutions in Norway.

The EU ETS, which encompasses traditional land-based industry, the oil and gas sector and aviation, only applies to c. 50% of Norway’s GHG emissions and the remainder must as such be addressed by domestic policies. Initiatives in this regard include the Norwegian carbon tax established in 1991 and the Norwegian–Swedish green certificate scheme, although it should be noted that c. 85% of projects under this scheme has so far been established in Sweden and that it might be discontinued from 2021.

CICERO reports that Norway has developed a strong knowledge base for improving energy efficiency through innovative IT solutions and the impact of more extreme climate conditions is being addressed by the development of climate robust buildings. Forestry, agriculture and aquaculture are also important renewable resources for Norway and approximately half of Norway’s CO2 emissions are absorbed by domestic forests that cover 37% of the land surface (Norway’s Sixth National Communication under the Framework on Climate Change, 2014). The subsea interconnectors from Norway to the UK and Germany may also lead to the development of more domestic renewable energy projects going forward.

However, the non-EU ETS sector in Norway with the greatest potential to reduce GHG emissions is the transport sector (26% of total GHG emissions in 2012), and road transport (19% of total GHG emissions) in particular. 39% of road transport GHG emissions comes from goods transport. In order to reduce this, NHO (Confederation of Norwegian Enterprise) has suggested a CO2 fund whereby participants are exempt from the carbon tax if they contribute to a fund that in turn provide grants for projects aimed at reducing CO2 emissions. TØI (Norwegian Centre for Transport Research) has estimated that this could lead to a 20-50% reduction of CO2 emissions until 2030 from the heavy transport sector alone. Furthermore, the concept has been proven by NHO’s successful NOx (nitrogen oxide) fund which has granted USD 700m of proceeds that are expected to result in a NOx reduction of 44 000 tons.

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Electric vehicles as percentage of total vehicles - 2016

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Norway</td>
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<tr>
<td>the Netherlands</td>
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<tr>
<td>Sweden</td>
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<td>UK</td>
<td>1.50%</td>
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<td>France</td>
<td>1.50%</td>
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<td>China</td>
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Source: IEA – Global EV Outlook 2017

Personal transport accounts for the remaining 61% of GHG emissions from the road transport sector. A sustainable personal transport sector can be achieved through a reduction of the total transport need, increased public transport and car sharing, and reduced emissions per km by promoting more environmentally friendly vehicles. Reduction in transport needs and public transport is challenging in Norway due to low population density and long travelling distances, and the greatest reduction of GHG emissions can as such best be achieved by focusing on reduced emissions per km. This is reflected in governmental policy which has significantly changed the Norwegian vehicle composition in recent years.

Norway is the clear electric vehicle pacesetter in Europe. In 2017, 50% of new car sales in Norway are expected to be electric, hybrid or plug-in hybrid, and 20% are expected to be electric (ofv.no). Norway has the third largest electric vehicle park in the world (IEA) and Tesla alone has sold around 100,000 electric cars since 2013.

This has been driven by very strong incentives for environmentally friendly vehicles. Electric cars are exempt from the 25% VAT tax and import tax (A Tesla Model S with the smallest battery has a retail price of USD 73,448 vs USD 72,678 for a standard BMW 520i Touring), a reduction of annual fees, free electric charging stations in major cities and along major highways, generally no toll payments and an allowance to use the bus and taxi lanes. In addition, Norway has the world’s highest petrol prices (USD 2.01 per liter in October 2017 compared to USD 1.71 in Sweden, USD 1.59 in Germany and USD 0.74 in USA (globalpetrolprices.com)), which is another powerful incentive for electric vehicles. The current electric vehicle scheme expires in 2020, but it is likely to continue under the Conservative led government who has stated that all new vehicles sold after 2025 should be zero or low carbon. As such, the push for a Norwegian electric vehicle fleet will continue to be the main driver of non-EU ETS GHG emissions reductions.

A Norwegian governmental proposal for the 2018 national budget released on October 12 included a tax for heavy electric vehicles that could be as much as c. USD 10,000 per vehicle. The main argument was that the tax exemptions and incentives that have driven electric vehicle sales had primarily benefitted wealthy Norwegians who can afford to buy luxury electric cars. In addition, some argue that supporting heavy electric vehicles contributes to road dust pollution and congestion due to their special road and parking privileges. The critics of this proposed tax, including many environmental organizations, point out that an abrupt change of environmental policy such as this could reduce investor and consumer confidence.

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7. Fuel Disruption

The global economy is rapidly changing on the back of technological progress and environmental challenges. We have addressed this over the past few years, most recently in March when our headline was Water Security. New technology and environmental factors are heralding the demise of the internal combustion engine and speeding up the transition to displaced car ownership with self-driving vehicles. Many stakeholders and experts see 2040 as the end game for the combustion engine, but segments of this transition could occur much sooner.

Over the past year, many European cities have proposed restrictions on diesel cars to address air pollution. This includes everything from a complete ban to restrictions and higher fees. In February 2017, the European Commission issued a final warning to five member states (France, Germany, Spain, the UK and Italy) for failing to meet ambient air quality standards for nitrogen dioxide. National governments could face fines for these transgressions, which could in turn be pushed out to cities. As a result, cities in these countries are now moving fast to phase out diesel vehicles, which account for 80% of all nitrogen oxide emissions from vehicles in Europe, according to The International Council on Clean Transportation (May 2017).

Major cities such as Paris, Madrid, Athens and Mexico City are discussing a diesel car ban from 2025. Central London is planning new taxes on diesel cars starting in early 2019. No new diesel taxi licences will be provided as of January 2018. The proposal includes expanding this to greater London and the government is planning to push this to other cities as well. Furthermore, Stuttgart, Munich and Berlin are planning to introduce restrictions starting next year. Barcelona has announced an ambition to ban old cars (pre-2006 diesels and pre-2000 petrol) starting in 2019.

Even if it takes until 2025 before most European cities have sharply restricted diesel vehicles, the market impact could emerge much sooner. Tracking the major European markets for diesel cars, new registrations have been slowing markedly, especially after “Dieselgate” hit the wires in September 2015. In 2013, 70% of all new car registrations in France were diesel.

Today this has dropped to 55%. A similar change has occurred in Spain. So far the reduction has been smaller in the UK and Germany, although both markets start from a lower level of around 50% of new vehicles sold. Combining these four markets, the current 12-month rolling mean of diesel car share of new registrations is receding by some 8% per year. Dieselgate could be said to have set it off, but the cities plan to ban could accelerate the shift against diesel further. With demand from city drivers slipping, second-hand market prices are likely to come under pressure. The interest for non-city drivers of buying a new diesel car would then slip. With an auto manufacturing industry in much need of economies of scale to be profitable, supply could quickly be restricted. Therefore, we cannot exclude the possibility that we are at an inflection point where half of the current market for new car sales in Europe will be slashed over the coming few years. Although we acknowledge that there are many unknowns, the European auto industry makes a perfect case study of how stranded assets can be created and the repercussions for other industries.

Although this development could arguably speed up the transition to electric vehicles, the short timespan will probably make it difficult to have efficient infrastructure and volumes in place to be a viable alternative for most cities. The cost of these vehicles is another issue. Hybrid cars, if their powertrains are based on petrol engines, could be expected to see an upswing. However, in the short-term, it is most likely that pure petrol cars will increase their market share. The direction that the market will take is most likely to be affected by new policies. Incentives stemming from subsidies and fees outside diesel could tilt the market quickly.

As discussed above by Kristoffer Nielsen of SEB, Norway serves as a good example of how quickly things can change when given the right incentive. In 2011, new registrations of electric vehicles were 1% of the total; last year they represented 40%. The government has supported this through large tax breaks, toll free driving, free parking, free charging and permission to use bus lanes. In terms of our equity universe, we have asked our analysts to sketch out the possible disruption to their stocks and sectors. This suggests little or no impact on the majority (89%) of the stocks we cover. The distribution of potential winners (4%) and losers (7%) is fairly even.
Figure 18. Most Nordic stocks expected to be indifferent to diesel restrictions in Europe

Source: SEB analysis

We have identified 11 stocks that could benefit from the potential disruption. Please contact us if you are interested in the specifics, but in terms of fuel, and not knowing exactly how this will turn out, some companies could benefit from alternative fuels such as biofuels, adblue, CNG or hydrogen. On the flip side, price drop for this fractional distillate would benefit transporters, be it land transport or sea transport. Especially interesting for ships is that the UN International Maritime Organisation, which governs international shipping, decided in late 2016 to sharpen sulphur limits in marine fuel from 3.5% to 0.5% in 2020. To meet these requirements, ship owners will have to invest in emission cleaning systems (i.e. scrubbers), switch to alternative fuels such as liquefied natural gas or the technically less costly higher quality marine fuel diesel gas.

At another end of the supply chain which could leverage on this disruption, if it translates into greater need of replacement and a ramp-up of new car sales, we find potential for those businesses within advanced high-strength steel. With the potential that this disruption could speed up the penetration of hybrid and pure electric vehicles, the need from the metal and mining industries for equipment, process solutions, technologies and services could rise.

We should neither neglect the cities’ need for qualified engineering services in paving the way for this change, be it to improve electricity infrastructure in general or urban transportation systems in particular. Some Nordic business models are tilted towards the public sector and planning, design and construction phase of sustainable societies.

The losing side of this potential disruption is difficult to pinpoint in the Nordics as it rests heavily on the important assumptions we have to make at this stage. As discussed above, we expect the short to medium-term effect to be that diesel cars will be replaced by petrol or petrol-hybrids and to a lesser extent pure electric vehicles. The demand drop for diesel cars could be abrupt and could strand assets. Our sensitivity analysis suggests that a sudden 10% drop in used diesel car retail prices could lower EBIT by some 3-4% (as a one-off effect) for one company.

Certainly there are valid counterarguments. This disruption could arguably lift prices for petrol cars. Furthermore, certain companies have proven ability to adjust inventories very quickly in times of market disruption. Other Nordic stocks in the retail space facing potential headwinds due to revenues stemming from servicing vehicles powered by internal combustion engines. However, to describe a negative short-term scenario, we must assume that the market will seek to replace diesel cars with pure electric cars. If not, these stocks will be sheltered by petrol cars picking up the slack and that servicing costs have a low correlation with the end market value of the car being serviced.

A similar chain of arguments is needed to position some of the Nordic core blue-chip stocks. Most have significant exposure to the automotive business, and in particular to assembly lines, tools and vital components directly linked to the combustion engine part of the value chain. However, it makes little difference to them if petrol or diesel cars are being built, so if the disruption is isolated to diesel cars the implications will be small.

Then to the elephant in the room – what does this mean for the oil market, oil companies and oil service suppliers? Light vehicle cars represent around 25% (BP statistics 2015) of global oil demand, and although the new car sales of non-diesel cars are picking up, it will take some time to renew the whole fleet and meaningfully affect global oil demand.
Furthermore, as we have seen during the current downturn, the oil market has an elastic supply side both in terms of barrels and profitability for the oil companies. Please contact us for our latest Oil sector update.

Our in-house research suggests that the global oil companies are making more money at the current oil price (USD 50/bl) that they did in a USD 100/bl environment. If anything, the risk is on multiples and not earnings, we think. We also highlight that should low-consumption diesel vehicles be replaced by petrol vehicles, this could trigger higher oil demand; and with the global vessel fleet shifting from bunker to higher quality fuel (as discussed above) one could argue they would be on the margin winners in the short to medium-term.

All this stems from a potential disruption triggered by political decisions that will be made over the coming years – this must be monitored as the market normally discounts events well in advance.

8. Nordic issuers to launch joint position paper on impact reporting

Following 14 months of cooperative development work, a group of some ten Nordic public sector issuers are now preparing the launch of a joint Position Paper on Green Bonds Impact Reporting. The position paper will be launched in Paris on 24 October, at a cocktail reception in connection with the OECD Green Investment Financing Forum. Representatives from Nordic local government funding agencies Kommunalbanken (KBN), Kommuninvest, and MuniFin will be presenting the paper on behalf of all the signatories.

Developed with the primary aim of providing a practical guide for Nordic public sector issuers in their green bond impact reporting, the signatories hope that it will prove useful also for issuers from the private sector and from other countries as well as for the investor community. The paper proposes an outline for reporting environmental benefits of green bond investments in a harmonized manner as well as guidance on general matters, and includes suggestions for metrics and indicators relevant to eight different project categories.

Events to introduce the paper to issuers and investors are planned for a number of cities, including Frankfurt, Helsinki, London, Oslo, Paris and Stockholm. The position paper will be available for download on the signatories’ web pages such as www.munifin.fi, www.kommuninvest.org and www.kommunalbanken.no from 18.00 hrs CET on October 24, 2017. The launch event, as well as the OECD Green Investment Financing Forum, is open to investors and other interested parties.

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